DOCUMENT RESUME

ED 046 093 EA 003 217

AUTHOR	Wright, Patricia S., Ed.
TITLE	Institutional Research and Communication in Higher Education. Proceedings of the Association for Institutional Research Annual Forum on Institutional Research. (10th, New Orleans, Louisiana, May 13-16, 1970.)
INSTITUTION	Association for Institutional Research.
PUB DATE	70
NOTE	289p.
AVAILABLE FROM	Dr. Patricia S. Wright, Office of Institutional Research, University of California, Berkeley, California 94720 ($6.00)
EDRS PRICE	EDRS Price MF-$0.65 HC Not Available from EDRS.
DESCRIPTORS	College Admission, *Communication (Thought Transfer), *Communication Problems, *Communications, Educational Planning, Educational Research, Evaluation, Followup Studies, *Higher Education, Information Systems, *Institutional Research, Instructional Programs, Interschool Communication, Negro Colleges, State Agencies, Student School Relationship, Systems Approach, Systems Development

ABSTRACT

This report embodies a collection of conference papers presented by various authors. The subjects covered include (1) communication in higher education, (2) the institutional researcher as a communicator, (3) communication with State agencies, (4) communication with other institutions, (5) communication within the institution, (6) instructional units, (7) communication concerning students, (8) communication of policy, (9) communication in longrange planning, (10) information systems and the systems approach, (11) educational evaluation (12) student followup studies, (13) admissions studies, and (14) institutional research at predominantly Black colleges and universities. (LLR)

ED0 46093

INSTITUTIONAL RESEARCH AND COMMUNICATION IN HIGHER EDUCATION

PROCEEDINGS OF THE
10th ANNUAL FORUM
on
INSTITUTIONAL RESEARCH
SPONSORED BY THE
ASSOCIATION FOR INSTITUTIONAL RESEARCH

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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FOREWORD

Each year the Association for Institutional Research holds an Annual Forum. "Communication in Higher Education" was the theme of the Tenth Annual Forum held in New Orleans, Lousiana on May 13-16, 1970. This volume contains the resulting papers.

Some of the reasons for the growth and development of Institutional Research are contained in the papers presented. Indicative of this growth and development is the number of papers published in the Proceedings of the Annual Forums. This year's publication contains 83 papers, in 1969 there were 22, in 1968 - 32 and in 1967 there were 22 papers published.

Space limitations have resulted from the many pages of copy submitted for publication. Deletion of appendixes, introductions and other aspects of the papers were necessary and the Editor apologizes for any damage resulting from this process.

The promptness of this volume is the result of the session chairmen and individual contributors who prepared their papers for publication. Thanks are also due the staff of the Office of Institutional Research, University of California, Berkeley for their work on the manuscript. Any errors are, of course, the responsibility of the Editor.

Patricia S. Wright

COMMUNICATION IN HIGHER EDUCATION

THE SEARCH FOR GOALS

John S. Toll
State University of New York at Stony Brook

In meeting with the Association of Institutional Research, I feel among old friends, for this association was formed just six years ago during your meeting on the Stony Brook campus. Since then you have grown greatly and the importance of your work has been widely recognized. I come to you tonight to ask, on behalf of myself and my fellow university presidents, for your help in our search for agreement on the goals of our universities.

As a nation we now need more than ever before to reexamine our national goals. We in the universities must contribute constructively to the national debate and must also identify much more clearly our own role in society. This can only be done on the basis of sound planning and your group, as the professional experts in the analysis and planning of universities, must take the lead in studying the university's opportunities and in recommending future directions.

My speaking to all of you on "the analysis of university objectives" recalls the tale of the survivor of the Johnstown flood, who became famous for the rest of his life for his speeches on how he escaped the innundation. After he died and went to heaven, St. Peter asked him what he wanted to do. The gentleman explained that he would like an audience to be gathered so he could tell his story of Johnstown's flood. After the crowd came and just before he began to speak, St. Peter leaned over and said, "I think I should tell you, Noah is in the audience".

This is how I feel tonight, for many of you are better qualified than I am to discuss the role of our universities. But I feel this job of analyzing where we are going is so important that I have taken leave for this semester from my post as President of the State University of New York at Stony Brook in order to serve as the first director of our Chancellor's Panel on University Purposes. This group, of fifty able students, faculty, university administrators, and leading citizens from outside the university – legislators, labor and business leaders, diplomats, philanthropists, and public servants – is charged with identifying the goals of our whole state university system, looking decades ahead. The rapid changes in our society may require some drastically changed approaches in the future, so we are considering boldly many alternatives. I come to this group, as the real experts in the field, to ask for your help. If you know of any especially helpful studies of the future of our society or the university's roles, I hope you will let me know. We need the results of your studies as well as your crystal ball gazing.

I have always thought such planning was needed. The past few weeks dramatize how urgent it is.

Our universities today are in turmoil. The anxiety in our whole society is reflected in and intensified at our universities. Those of us in the university have the same obligation of all citizens to participate to the best of our ability in the development of our national policy and to help in solving the problems of our society. But we must find ways for these activities to occur so that they do not tear apart the university itself.

On over one hundred campuses most of the students have already left before the end of the school year, and many students and faculty on nearly every campus are participating in the national "strike". Almost all the activity has involved intensive discussion of our national policies or of university problems. For most of us, much of the past two weeks has been consumed with such discussions. I applaud these constructive efforts, as I also approve of such plans as the one Princeton and Stony Brook are making to adjust the academic calendar next year so that students will be free to participate in the political campaigns of their choice next October and then make up the study time by reduced Thanksgiving and Christmas vacations. We should welcome any such means of getting students involved constructively in their roles as citizens.

But I deplore the acts of those who would endeavor to achieve political ends by stopping or impeding the functioning of the universities. I oppose such actions strongly for two reasons:

> First, as tactics to influence national policy, they are worse than ineffective: they are counter-productive. It is far easier to attack illegal or improper acts on campus than to defend military policy in Viet-Nam; thus the extent to which the campus disruptions are noticed, they detract from the attention that should be given to the national debate. Violent and disruptive tactics only discredit the cause for which they are used.
>
> Secondly, the university is being done great damage by the misguided attempts to stop its function. In times of conflict and disorientation it is the rational analysis by members of the university, as the intellectual conscience of our society, that will be needed. While present problems are grave, other serious problems will occur next year and thereafter. Let us not by thoughtless actions now damage the universities whose spirit of reason and tolerance will be needed as much in the future as now.

Of course, the Universities must respond when they are attacked and must defend their reputation and autonomy. But we must not ourselves be subject to criticism when we criticize others. We must recognize how vulnerable to attack the disruptions make us. Inevitably the destructive acts of arson or violence by a few students or the refusals by some faculty to perform their duties will receive far more publicity than the totally proper actions of the great majority of students and faculty. Thus the public reaction to university events is more extreme than justified, and the public backlash makes the universities the scapegoats for public antagonism when we are dependent on public support.

One of the most effective ways to avoid such unfair condemnation of the Universities is to clarify the Universities role. In the field of political action, the University should not promote a partisan cause but should fearlessly protect the rights of minorities in any dispute, helping the right cause to win by persuasion through the strength of its own arguments.

In general, we need to gain public support for the Universities' key roles as centers of learning, where all from the entering student to the distinguished research professor are laboring to advance their knowledge. In our increasingly complex society, the role of knowledge becomes ever more important, and we have to maintain an atmosphere where the devotion to learning is emphasized.

The purposes of our University must be consistent with an overall educational philosophy. Nothing should abrogate our commitment to free inquiry and free expression.

If you go to Washington, D.C., soon, as so many of our students are doing now, I urge you to visit the Jefferson Memorial. For me the best summary of the basic philosophy of a university is given by the oath of Thomas Jefferson inscribed there, "I swear eternal hostility to every form of tyranny over the mind of man".

Within these broad limitations of commitment to learning and the free advance of knowledge, there are many choices as to precisely what the university should do and how it should organize to do it. The decision as to whether a given program should be undertaken will mainly depend in the final analysis on an evaluation of the benefits to society in return for the required investment in that program. It is extremely difficult to identify and to quantify these benefits. We clearly need to consider "benefits" in the largest sense. But we cannot dodge the requirement of making this analysis. In the past the value of educational programs was taken for granted. Universities could count on sympathetic reception of their budget requests by state legislatures or sponsors and on increasing grants each year from the federal government. This is not so anymore. For the past two years, universities throughout the country are encountering increased resistance to the funding of their programs, and in every real index the budgets are getting tighter. The one thing that seems to continue to grow faster than we wish is the demand for **justifications**, which each year must be more detailed and are subjected to more searching analysis than ever before.

To gain and to retain support, universities have to define their goal, beginning with statements of general purpose and then gradually refining them into specific objectives. Each university program may be judged by the extent to which it achieves these objectives. The Program Planning and Budgeting System that most universities are now using specifically makes such evaluations. In the final analysis each program grows in response to its benefits to society as recognized by those who support the university. This budget reality is expressed at one university by the rule "Each tub on its own bottom".

Many fear that this requirement of detailed justification of various programs may lead to a kind of crude numerics in which the more quantifiable aspects of a program are overemphasized. But it is up to each of us to see that this does not happen. For example, it is obvious to us that excellence in teaching is **not** measured by the ratio of faculty to students; numerous studies show that the quality of the faculty is much more important than the precise class size. But how do we measure quality?

These problems of quantifying features of quality are not limited to the university. How do we evaluate the contribution to our lives of a good string quartet? In general, it is extremely difficult to quantify the benefits of creativity which the university tries, above all, to encourage. But we can detail the outcomes expected from various approaches to a goal and then can evaluate the effectiveness of these alternatives and compare their costs.

We make our analysis, quantitative or qualitative as appropriate in each factor, as sound as is practicable without assigning these evaluations more importance than they deserve. We should be quantitative only when it is meaningful. The point I wish to stress is that we can get the support we need in the future only if we are willing to supply these justifications to a doubting society.

Perhaps the best job in the evaluation of education has been done by our colleagues in the health sciences. Beginning with the outstanding work in the late 1950's of Gus Carroll of the Association of American Medical Colleges, the health sciences have been evaluating over the past decade such factors as the use of faculty time. For example, in one of these major studies involving seven leading medical centers, the time of faculty was apportioned among twelve different categories. By such an analysis of salary and other costs, it was possible to estimate with common sense the amount of relative effort that the institution was placing into undergraduate medical education toward the M.D. degree, graduate education in the Ph.D. degree, intern and resident and house staff education, research under external sponsorship, other university research, clinical services, advisory help to the community, and etc. . .

Of course, some of these activities could not be pursued without others. Nevertheless in trying to compare investment with benefits, such an approximate and reasonable breakdown is necessary so that informal judgments can be made in the guiding of university policy.

Many participants in this study feared that it might harm, in some way, the programs of medical education. But most medical schools are now convinced that, in fact, the studies are extremely beneficial; they have been conducted every two years over the past ten years, and have provided reasonable justification for the extensive university expenditures for the combined operations of health care and health education. Most important, the analyses have helped to free us from the shackles of past practices; for example, where a faculty member's teaching load was measured by contact hours in class, now more realistic measures of student benefit are used. Similarly the detailed evaluations of alternative distributions of staff time and other resources have helped to improve medical care for patients within the university environment.

We need much more extensive research on how well a university is achieving its objectives, so that we can consider new alternatives. Here is a monumental task before each of you in this room. Let me illustrate by discussing the University's objective of aiding the student's learning. For the most part, we should not care whether the student reaches his goal by attending lectures, by tutoring, or by independent study. We now have many new techniques of individually programmed instruction, T.V. and computer assisted-instruction. While much research needs to be done, psychologists have found many new clues about human learning in recent years, and we can soon apply them. Yet University procedures in the past have not been sufficiently flexible to encourage each student to learn at his own rate.

In the future, I think we must emphasize that "learning", not "teaching" is the basic objective and must make our requirements more flexible, always testing our criteria to see if they are valid. We must deemphasize grades, credits, degrees, and honors as the goals of the student and stress that learning itself is the goal. One way to do this is to facilitate new tracks, so that, for example, students can attain a degree without ever registering for a course or attending a lecture, but just passing an appropriate examination to show he has learned the material.

We particularly need your help in estimating the major future changes in our society and the effect that these will have on the University. We want to develop scenarios of the way in which the University might change, if, for example, new technologies would permit much more programmed learning on an individual basis so that much more of the education could be done in the student's own home. Perhaps cassets will be installed into the individual's TV set, and a small computer will question the student and then direct him among alternative paths as is best for him; a telephone hookup may automatically report his progress to the university computer, which will identify those who need personal attention. Maybe future students will choose by dial access videotapes of the country's best professors. With our rapid changes in society, continuing education may expand drastically in the future and education may be much more intermixed with other parts of the individual's career. Education may be increasingly performed by museums, theaters or on the job in business. We must be **imaginative** in trying new approaches to learning.

Will the probable increased emphasis on individual learning reduce the need for faculty? Here I have some doubt, for the book has been a rather ideal instrument for individualized instruction for 500 years and yet most students still need the university for **motivation.** Depending upon the charismatic teacher for inspiration and fellow students for stimulation.

But we should not be afraid of change. We should not assume something will be true in the future just because it has been true in the past. The student faculty ratio was given in the Talmud and is still about that in U.S. school, but it may change. It is fascinating to realize that U.S. high school students have spent in their lives, more time watching T.V. than in the classroom; what was appropriate for their parents may not be appropriate for them. We need to know more about our students' attitudes and needs, and more research of the kind Mr. Astin has done for the A.C.E. is highly desirable.

The theme of this conference is rightly on communication. We must not only make these analyses of the needs of students and the effectiveness of university programs, but we must convey them to the faculty and students so they can be used.

Let me turn now from the problems of learning to the University's goals of direct service to society. Are universities doing all they should to attack the problems of international peace, of human misunderstanding, prejudice, poverty, and poor health?

I suggest that, as one guide for the future, we should examine where the Universities have in the past been doing their best in serving society and see if the methods used there can generalize to our other responsibilities.

Starting with the Morill Act of 1862, a particularly outstanding feature of the development of state universities has been their contribution to agriculture. Here the combined efforts of farmers, industry, universities, and governments have generated an unparalleled record. The proportion of our population involved in agriculture and the land under cultivation per capita have both dropped ten fold in the past century, yet the production per capita is increasing and provides enough for ample diets for all Americans. (We still have problems in seeing that this food gets to all citizens who need it!).

As economist John Kenneth Galbraith has written recently, "Far more than most people realize, the United States owes its eminence in world markets not to its industry but to its incomparably efficient agriculture".

If one examines the key role of the university in the high level that American agriculture has attained, one notes the comprehensive nature of the university services that have been supplied. The work has been truly interdisciplinary and has involved persons of many talents. The research has ranged from basic studies in the sciences related to agriculture to research directly applied to the developments of such new crops as hybrid corn and miracle wheat, or to marketing and distribution. No problem has been too small for attention, from a new use of cottonseed to recreation for the farm wife. Universities have provided education at virtually every level in agriculture, so that almost every farmer has come in contact with university programs and has kept in touch with its continuing flow of information and service. Farmers feel that the universities are part of a total system which will respond quickly to their problems.

Very important in the system has been an extension program of the universities, affiliated with the system of county agents who provide a wide variety of services for every farm family. If an unknown mold occurs on the wheat or if the milk tastes a little funny, the farmer has access to the laboratory at the university and knows just how, through the county agent, to make use of the services available to him.

State universities are not responsible for making major decisions on agricultural policy, but they do feel responsible above all to supply a spirit of innovation and of comprehensive concern so that barriers are surmounted and all important and practical avenues of progress are explored.

It is not my purpose here to extol the university contributions in agriculture, but rather to ask: Can we perform a similar service on the broader problems of society and, if so, how?

I believe that universities should be contributing in other areas of our society in much the same way that we do in agriculture, although I recognize that there are some limits to this analogy. The problems of society are so great and interlocking that a comprehensive and determined attack on them is necessary. Our approach to many problems now is too piecemeal; yet the university provides the best mechanism available for bringing these pieces together, that is, bringing many disciplines to bear on any urgent problem that requires expert analysis.

An example of the application of a comprehensive approach to urban problems is given recently by the experience of New York City. Under a contract with the Rand Institute, which in total costs New York about three million dollars per year, a special group was set up under an adjunct faculty member at Stony Brook to study what could be done to help the operation of the Fire Department. The frequency of fires has grown rapidly in major cities and the need for improved operations at economical costs is very great. This group analyzed the responses to fires in New York City and discovered that a major problem was bringing a hose with water to bear on the fire promptly. A safe stream of water required a heavy hose. The group reduced this problem by developing "slippery water" which was made by the addition of an ounce of polymer to every 200 gallons of water; this had a remarkable effect in reducing the pressure required for a given stream to one third of the pressure needed without the polymer. Alternatively, with the same pressure, the necessary stream with polymer could be supplied in a smaller hose; this led to a reduction in the size of the standard hose which in turn permitted both increased speed in getting to the fire and reduction of one man per shift per fire crew. From this development alone, when it is extended to the full New York City Fire Department, a savings of 20 million dollars per year will be realized. Other savings can be achieved just by allocating men to the various shifts in accordance with the daily fluctuation and average number of fire calls. This will save approximately 10 million dollars more per annum. The amortized cost of these changes amounts to approximately $100,000 per year, so that there is a return of approximately 300 to 1 on this investment! This does not count the even more important prevention of fire deaths and damage by prompt responses!

It may be said that I have picked a particularly fortunate example and that not all attempts to solve society's problems will bring such obvious quick return on the investment. This is certainly true. But overall this New York City effort in a comprehensive approach to urban problems is already yielding a 10 to 1 return on the investment.

Yet we have not done more than scratch the surface. **Only in agriculture and in the national defense effort have we fully mobilized the intellectual resources that are represented by universities.** Of course, many universities perform key services to society in other areas, but the effort is certainly small compared to the need. The question I want to ask you is "Should we now organize for the problems of society and attack them as we have attacked those of agriculture?"

Of course there are difficulties for the university in maintaining its central functions of teaching and research and still taking on other services. Vice President Agnew recently warned universities they should not attempt to undertake too many social services, because of the danger that they may detract directly from the university's basic programs.

But we can avoid such diversion of support if we use the budgetary principle: "Each tub on its own bottom". If the university budgets clearly for each of the services that it performs and does get a proper return for the costs involved, then I think it should on this basis enter a wide variety of services. Here is where your theme of communication is so important again. Students properly question whether the outside activities that draw a faculty member away from the campus are not damaging their educational programs. The answer is that, if that portion of the faculty member's time is, in one way or another, allocated to the outside services he performs, then the faculty will be expanded proportionately, so that the time devoted to the regular university activities is maintained on a proper basis. Students will then find that they are getting the attention required for good teaching and faculty involvement in the direct problems of society often makes the teaching more exciting.

Of course, not all faculty would be involved in programs of direct service. One major difference between the agricultural and the urban areas is the greater complexity of the problems and correspondingly the greater need for basic research in the fields affecting the urban crises before practical approaches can be identified. We must expect to have a major portion of our faculty involved in these basic researches. But others will, under this proposal, be involved in applied research, and still others in extension work. The key feature of the "agricultural analogy", in my mind, is the recognition of the complex system required for major progress, with an organization which recognizes and rewards the role of each contributor properly and which encourages the different groups to work together flexibly as any given problem requires.

An involvement in the problems of society by the faculty and special staff also provides an avenue through which the students can themselves work on these problems. We have many examples of this at the present time, but I think we will see much more of it in the future. Often field work is required for professional students who are preparing for careers of service. Of course, students of social welfare work in the slums as a part of their education, just as the future nurse or medical student must work on the wards in the hospital. Increasingly in the future we can expect that the students in the social sciences will also be involved in practical programs such as internships with local government agencies. This will constitute an effective answer to the common student desire for "relevance".

These remarks were only intended to be suggestive of the changing and expanding role of our universities. Just now we are encountering a period of sharply constricted finances, public backlash, and internal tension. But, in our society of increasingly complex and urgent needs, knowledge becomes ever more important. The University will have rapidly increasing demands placed on it, and the members of AIR have the major role of analyzing these demands and evaluating the effectiveness of various ways of meeting them. Then you must communicate your result to calatyze agreement on our changing goals to meet the future requirements.

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COMMUNICATION IN HIGHER EDUCATION: NOBODY UNDERSTANDS ME

John A. Hunter
Lousiana State University System

I served several "character-building" years as registrar back in the early 1950s, and during that time I had the opportunity to help develop the first organized program of institutional research at LSU.

Institutional research in those early days was truly a pioneer effort, particularly when we compare its tools – and results – with the modern I.R. program. In those early days, of course, we had nothing to compare with today's computer, a term which at that time had not yet become a household word.

It was a beginning, however, and many of you have made vital contributions toward building upon that initial effort and developing a program that has become absolutely essential to the operation of the modern college and university.

The institution I represent offers an excellent example of why today's typical college or university cannot possibly plan adequately, expand realistically or serve responsibly without a sound program of institutional research.

The LSU system enrolls some 31,000 students on eight campuses throughout the state. Without an effective office for institutional research to provide the necessary basis for farsighted decision-making, it might well be said that we were operating Louisiana's major educational facility by the seat of our pants.

Since there are not too many Solomons on college campuses today, and because the problems facing the modern institution are more complex than ever before, the average administrator is desperately seeking a source of valid counsel that will inspire a reasonable degree of foresight, provide the framework for the right decisions at the right time and result in meaningful progress amid the most challenging circumstances.

Generally speaking, institutional research is the science of identifying the achievements, problems and needs of an institution through the development of various data and statistical analysis. At your respective institutions, you are in a position to do just that.

Of course, we all know that on occasion even the most carefully developed statistics can be misleading. I might give you an example passed along the other day by a colleague of mine.

The population of this country is approximately 200 million citizens. Let's break that figure down into identifiable groups.

Among these 200 million citizens there are 75 million above the age of 62, leaving 125 million to do the work. Students total another 70 million, leaving 55 million to do the work.

Then there are some 30 million employed by various levels of government, leaving 25 million to do the work. Five million are in the Armed Forces, leaving 20 million to do the work. From that figure we can deduct 19,800,000 housewives who labor only at home, and that leaves 200,000 to do the work.

There are about 126,000 others in hospitals and institutions, leaving 74,000 to do the work. But 62,000 of these are said to be people who don't want a job, so that leaves 12,000.

And it may interest you to know that there are exactly 11,998 people in jail, so that leaves just 2 people to do the work. I suppose that is you and I, and brother, I'm getting tired of doing everything myself!

Fortunately, the statistical methods employed by most institutional research offices are somewhat more useful and reliable than that analysis would indicate. And our institutions are more responsive to the educational challenges of our time because of it.

All is not yet roses, however. I might direct your attention to the title of my remarks – "Nobody Understands Me". Now I am aware that such a title sounds like the plaintive cry of the unhappy spouse or frustrated child. It is a convenient and often-used explanation of why certain goals have not been achieved and certain problems have not been solved.

Yet, it is a phrase that is perhaps heard most often – in more or less those same words – in the modern university community. Administrators don't understand the faculty, faculty don't understand students, students don't understand either of these groups, governing boards don't understand the situation, legislators don't understand the university's problems, and the alumni don't understand any of these groups – or so it is alleged.

It would seem that in this marvelous age of technology, when we can communicate effectively with men on the surface of the moon, when we can transmit, live and in color, into our living rooms an event occurring halfway around the earth, when more words are printed and published than ever before, we are confronted in the university community with a communications problem of major proportions.

The most significant factor in this problem of communications on the modern campus, it seems to me, is that it is a two-way street. If we are to believe what we hear almost daily, apparently none of these groups seems to understand the other. Part of that complaint, no doubt, can be attributed to human nature. Throughout the history of mankind, I daresay that few people have concluded that they were fully understood, that their points of view received adequate attention and appropriate action.

But human nature alone cannot account for the widespread conviction that communication has, indeed, broken down – that my views, or your views, or those of any member of the groups I have mentioned all too often fall on deaf ears. The inevitable question is, why? Is this the normal condition of man? Is this periodic jamming of our inter-institutional communications network the best that the college or university can hope for?

I hope not – and I think not. The most basic principle of communication holds that four elements are essential to effective communication – a sender, a receiver, an intelligible medium and a meaningful message. It sounds easy, doesn't it?

We certainly have an abundance of speakers these days. We have a substantial audience of people who at least are trying to hear. And most of us speak the same language – most of us over 30, that it.

The element we must focus our attention upon, it seems to me, is the fourth element, the message – what we say, how we say it, whether we have done the homework necessary to come to grips with a given issue, whether we have the information at hand to foresee a problem well in advance and then deal with it before it explodes like a time bomb.

What I am suggesting is that perhaps we administrators have not yet taken the steps necessary to accelerate this information-gathering process. I can think of a number of problems of communication that have occurred on LSU's campuses and on other campuses around the nation that might well have been resolved handily had we possessed information that systematic analysis might have produced, information that could anticipate problems before they emerged.

All too often, the typical institution – perhaps because of its institutional nature – tends to **react**, rather than to act. There seems to be a widespread feeling that it is easier – or less painful – to solve a problem after it rears its ugly head, rather than to cope with it while it is aborning. The price of this traditional approach is often an unhappy faculty, a restless student body and quite a few administrators with Excedrin headaches.

Institutional research has done a commendable job in many vital areas to facilitate the communication process within the university community. Accurate long range forecasts of enrollment trends and building needs, for instance, have carried our institutions safely over many potential hazards. Precise studies of student characteristics, faculty, costs and salary structures have been valuable assets to institutions in presenting their cases to those who hold the purse strings.

In other areas we have achieved considerably less success in developing information – statistical and otherwise – that would facilitate a dialogue conducive to mutual understanding between the various campus groups. It is possible that some college and university presidents have not yet fully grasped the ultimate capabilities of an effective institutional research program. It has been my experience that such a program can provide useful information and shed illuminating light on just about any issue an institution chooses to pursue.

In the matter of student unrest, I am not sure just where institutional research fits in, but one thing is certain: every college and university president with whom I am acquainted agrees that communication between administration and student body falls considerably short of the ideal, far short even of what clearly seems to be within reach.

There is one school of thought which contends that students and college administrators are natural antagonists, that what is good and desirable and worthwhile from the viewpoint of one is automatically to be rejected by the other. Personally I am unwilling to buy that theory. As a matter of fact, it appears to me that in most cases – perhaps not all, but most – both students and administration seek goals that are quite similar.

The problem usually emerges when we get down to deciding just how an objective is to be reached – whether due process will be followed or whether a torch or brick should be employed, and whether administrations are willing to make every effort to bypass traditional but painfully slow and outmoded steps in bringing about change.

Quite frankly, I believe administrators have learned a great deal about communication from students. Last year on LSU's Baton Rouge campus, for example, a compulsory ROTC program of longstanding was made voluntary – the direct result of a calm, thoughtful, impeccably law-abiding campaign by student leaders. No buildings were burned, no faculty members were assaulted. No undue pressures were exerted. To the contrary, student leaders conducted themselves with skill and integrity in presenting their case. And they were successful.

It was a case of students, the administration and the governing board communicating effectively and rationally on an important issue. I like to think that this one project – conducted at all times on a high plane – stands as a landmark in student relations, providing concrete proof that, at least on one campus, students, the administration and the governing board **can** communicate and **can** reach an accord on an important issue.

It seems to me that the more effectively we administrators can anticipate student needs and wishes in the future, the more firmly established our lines of communication will remain and the better equipped we shall be to face squarely the matter of student activism and unrest.

It is apparent that one of the most urgent priorities of the modern university is to establish an open line of communication between the various elements of the campus community – a two-way communication to and from the president's office, to and from the faculty, the student body, the governing board and every other institutional entity. We must do so effectively – and within the foreseeable future – or else be prepared to face some serious consequences.

I have cited the role of institutional research in helping to bridge this communication problem, this apparent credibility gap on our campuses. But you, too, face this continuing problem alongside other members of your administration.

Institutional research is still in its infancy as professions are measured, not much more than a decade old. You, too, face the challenge of the new technology, the challenge to innovate, to develop new concepts, to devise more sophisticated methodology in dealing with communications problems of the future.

If we administrators do our job well, and if you do your job well, hopefully some day in the future we'll reach a point where the various groups within the campus community can say, with conviction: "I **do** understand you. Let's see if we can agree".

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THE INSTITUTIONAL RESEARCHER AS A COMMUNICATOR

COMMUNICATION IN INSTITUTIONAL RESEARCH: THE PURPOSE OF THE ASSOCIATION – PRESIDENTIAL ADDRESS

Thomas R. Mason
University of Colorado

The social movement occuring within our colleges and universities widened and deepened during the spring of 1970 after the Cambodian decision and the Kent State Tragedy. The wave of strikes, moratoriums, and violence that spread across many of the nation's campuses overshadowed all other issues. For a time, the concerns of institutional research with strengthening rational planning, improving educational processes, developing more effective resource allocation systems, building better information basis, and restructuring the patterns of governance in our institutions seemed to be futile exercises in the face of threatened disintegration.

Rationality – the exercise of that exclusive capability of the human being called **reason** – seemed to have little power against the dialect of destruction and the rhetoric both of rebellion and reaction. I am sure that many of you shared moments of despair this spring to witness the breakdown of reason in the very institutions that were conceived by society to foster it. Fortunately, on the vast majority of campuses that experienced any kind of movement this spring, reason did prevail as the academic year drew to a close, and many institutions reported that a new sense of coherence and a heightened level of communication between faculty, students, and administrators had developed during the course of the widespread reexamination of social values that occurred during the spring episode.

What appears to be a true reform movement occurring within our colleges and universities confronts those of us working in institutional research with the necessity to reexamine and re-evaluate our role. At the same time, the Association for Institutional Research must reassess the ways in which it can respond to the needs of its members as a medium of communication.

The founders of the Association stated its purposes as follows:

> "The major purposes of the Association for Institutional Research shall be to benefit, assist, and advance research leading to improved understanding, planning and operation of institutions of higher education. Research focused on a single institution or on groups of institutions, fall within these purposes. In keeping with the dynamic nature of institutions of higher education, the Association shall encourage the application of appropriate methodologies and techniques from many disciplines".

That statement of purpose still holds. Basically, the role of the association is to serve as a vehicle for communication among individuals concerned with research on the nature and processes of higher education. The old debate over whether institutional research should focus upon more basic research, on the processes of education, or upon the administrative processes is coming back into focus, and the issue merits reconsideration.

I say this because I believe that two major forces, substantially in conflict with each other, are pressing on all institutions of higher education and bear strongly on institutional researchers.

One force is the intensified demand for reform of the educational processes within higher education and a demand for the reallocation of power in the governance of our colleges and universities.

The second force, in part an external reaction to the student rebellion, is the demand for more rigorous justification of the use of public resources that support higher education. The competition for resources for other social purposes and the reaction against campus unrest have ended the honeymoon enjoyed by higher education during the past decade. The phrase "more effective allocation of resources" has become a catchword, if not a cliché, in higher education. The movement to develop program budgeting in higher education seems to be manifested everywhere (in England, Canada, and Europe, as well as in the United States).

The synthesis of these two forces – the campus reform movement and the imposing restriction of resources – focuses on the solution of the cost-benefit or cost-effectiveness equation of the economists. Both movements demand improvement in the effectiveness and in the benefits – the output – of higher education.

It seems to me that institutional research is in a crucial position in the search for better ways of assessing the effectiveness of higher education. Within the membership of the Association there are two principal streams of research emphasis: a) One focuses on the educational and student life processes, drawing personnel mainly from the fields of psychology and education, and b) The other stream emphasizes what we now call "management sciences", the applied aspects of the social and behavioral sciences, concerned primarily with the administrative processes in higher education.

It is essential that these two streams flow into the same river, that those of us concerned primarily with the processes of management and resource allocation establish and maintain a coherent communication to insure that our work is related to the primary educational functions of our centers of learning. Those of us concerned with the administrative functions are seeking and finding better ways of measuring costs; we must seek the assistance of those concerned primarily with the educational processes to find better ways of measuring their effectiveness and benefits.

The Management Information Systems Program centered at the Western Interstate Commission for Higher Education is currently seeking the resolution of the difficult problems of measuring educational effectiveness.[1] A grant from the Ford Foundation will permit the creation of a basic research group to pursue the problem of assessing the outputs of higher education and to probe more deeply into the economics of higher education.

Because of the high degree of coincidence between the interests and purposes of the Association for Institutional Research and the objectives of the WICHE MIS Program, I propose that the Association offer its organization as a communicator between the WICHE Management Information Systems Program and its institutional constituencies.

I believe that the Association for Institutional Research, because of the diversity of its membership, provides a ready-made and ideal communications medium between those who seek to know what higher education costs and those who seek to know what the money buys. I would hope that all of us, working individually within our institutions and meeting collectively in the association, will give concentrated attention to the problems and possibilities of measuring, evaluating, and describing the benefits of higher education. I propose this as a mission of the Association for Institutional Research in the coming years. It is a mission to further the original purposes of the Association "to benefit, assist, and advance research leading to improved understanding, planning, and operation of institutions of higher education".

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[1] Ben Lawrence, George Weathersby, and Virginia Patterson, editors, *Outputs of Higher Education* (Boulder, Colo., Western Interstate Commission for Higher Education, July 1970).

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INSTITUTIONAL RESEARCH IN THE PROFESSIONAL ORGANIZATION: IMPLICATIONS FOR COMMUNICATION

Stanley O. Ikenberry
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Those engaged in the study of colleges and universities, whether full time institutional researchers or otherwise are in a very real sense communication specialists. They communicate with no special effectiveness, but the essence of their mission is communication. They attempt to define an issue or problem, to devise tools to gather information, to process this information, and to attempt to convey to others the substance of their message.

The institutional researcher may be hurt or angered when those he intends to serve appear to reject his message. He may find that college faculty and administrators question not only his tools and techniques of analysis and therefore challenge his conclusions but that they reject his definition of the problem and the basic assumptions on which his study was based. Devastated, he may retreat to the conduct of research on less sensitive and probably less relevant issues, sending one copy of his findings to his immediate superior, and filing twenty or so additional copies just in case. In order to understand the communication challenges in the large, complex university, it is important to understand the nature of the organization and the environment within which communication must take place.

The University as a Professional Organization

Two contrasting types of complex organizations are illustrative in this regard. The first and most familiar of the two types is the production oriented organization. Max Weber described it well in his writings on bureaucracy.[1] The modern industrial state is sustained by countless numbers of production oriented organizations, so common place that one would be hard put to avoid direct daily contact with one or more of such organizations.

In the production oriented organization, goals can be and usually are set at the upper levels of the hierarchy, typically at the level of the governing board and top management. The goals and the basic means for goal achievement can be interpreted and reinterpreted to each successive level in the hierarchy. The message is translated and made more specific until the actions on the production line respond accordingly. Efficiency and effectiveness are achieved through careful task analysis; a high level of predictability is achieved within the organization both as to means and ends. Those at the lower levels of the hierarchy on the production line are not expected to exercise personal judgment as to the ends to be achieved or the means to be used; indeed, if this were to happen, the productive effectiveness of the organization would be severely damaged.

Such a model or theoretical framework may not be equally useful, however, in understanding all complex organizations. It is less useful, for example, in understanding the dynamics of a hospital, a research and development laboratory, a school, college, or complex university. Etzioni[2] argues, for example, that there are several organizations in which the standard Weberian assumptions do not hold. This is the case, he suggests in organizations designed to produce, apply, preserve or communicate knowledge. Not all such knowledge organizations are colleges or universities by any means, but such a description does describe the essential mission of America's complex universities. Etzioni calls this nonstandard organizational model a professional organization.

The essential difference between the professional organization and the standard production organization lies in an inability of the former to define objectives precisely and a related inability to specify precisely the means or procedures to be used in achievement of these objectives. The limitations stem less from the inherent complexity of the task and more from an **inability to predict the specific nature of the tasks in a given instance.** Because of limitations in the ability to predict precisely means and ends, the organization must be adaptive and flexible, continually searching for a best approximation.

Certain special conditions must prevail if the organization is to achieve this adaptiveness. First and most obvious perhaps, it is necessary for the organization to employ highly trained, perhaps overtrained personnel, faculty members, and to delegate to these individuals much of the authority and the responsibility for determination of means, ends, and standards of performance. The faculty member, as Thompson[3] suggests, becomes a "technical generalist" capable of meeting a wide range of contingencies including the needs of the atypical student, the unexpected question, the pursuit of an unpredictable direction in research, or the application of his knowledge and skills in the solution of a complex social problem.

A second adaptive mechanism of the complex university is the tradition of open communication. There is a calculated structural looseness, a de-emphasis of jurisdictional boundaries, and as a result, a great deal of shared communication as well as shared power. Faculty members on a senate committee, for example, may review a question of curriculum or a promotion recommendation from a department not even represented on the committee. Faculty members in one department feel no particular constraint in commenting on the adequacy of faculty or student performance in other departments. Both in the formal governance structure and outside ot it, faculty members are not hesitant to comment on administrative decisions, and if they judge appropriate, to call administrators to a public accounting. And students are becoming increasing vocal in the same fashion.

The ethic of open communication suggests that it is the adequacy of the decision and the quality of the information on which it is based that is important, with less emphasis on hierarchy or the formal positions of those who "decide". The basis for decisions therefore, must be open to inspection, including the basic assumptions, the information, the tools of analysis and the conclusions. Both the tradition of the university, and its adaptiveness as a professional organization require this openness and diversity in communication. Organizational adaptiveness requires an ethic which values the **quality of the solution** and not its source.

Still a third mechanism of adaptation in the professional organization is that members of the organization, in this case faculty members, maintain a strong professional commitment to professional values, even if this at times runs contrary to the goals and values of the organization. Complete commitment to and dependence on the organization will restrict innovation and adaptation and thus produce the stifling climate associated with bureaucracy. Faculty members are socialized in graduate schools to internalize certain professional values, norms and ethics to which they hold, even if these on occasion conflict with the values and norms of a particular university. As a result, many faculty members appear to be marching to a different drummer, which indeed they are, and at times of organizational crisis they may appear down right irresponsible. But such independence is essential if the university is to retain the qualities of an adaptive professional organization.

A fourth characteristic of an adaptive professional organization is that there must be a high level of problem insecurity, uncertainty or ambiguity. The very quality of adaptiveness requires a willingness to challenge the status quo, to re-examine the assumptions. Intangible goals, uncertain measures of achievement and the attendant dangers of goal displacement in the complex university require continuing re-examination and re-definition of the problem. Definition of the problem or mission at one level or in one sector of the university does not relieve the necessity of independent re-examination and re-definition at different levels and sectors. There are no final, absolute answers.

The question of the goals of an undergraduate education, the objectives of a praticular course, the use of a given class period, analysis of a student's problem, the direction of a research project, the need for service to help solve the problems of the inner city: these and countless other questions must be answered, but the answer must be uncertain, tentative, and frequently reviewed.

Implications for Institutional Research

What are the implications for the institutional researcher and for his patterns and techniques of communication? First, the institutional researcher, especially the newly arrived, must recognize that the complex university is a nonstandard organization. If he has been properly socialized as a graduate student or in prior faculty roles he may be aware of many of these organizational differences and of appropriate responses.

The typical location of the Office of Institutional Research within the university structure may provide some confusion along these lines. Attached to a vice president's office or to the office of the provost or president, the institutional researcher may be lodged in the most bureaucratic, production oriented sector of the university. It is at the level of the academic department that the workings of a university as a professional organization become most evident.

Secure in his office and with his daily associates, the uninitiated institutional researcher may gain distorted impressions and make false assumptions about the nature of the university. In the interests of communication as well as effectiveness he should move beyond the administration building to understand the reality of the complex organization of which he is a part.

Second, he should recognize that his research audience may be sophisticated, or believe themselves to be sophisticated, in the conduct of research in general and in the examination of the university in particular. Failure to recognize this fact will open the institutional researcher to criticism, many times valid. To see himself as **the authority** on institutional self study is to court both an inflated ego and disaster. Preferable is a practice of prior consultation, either formal or informal, with selected members of the faculty or administration whose professional skills and interests might have potential relevance to the study in question.

The ethic of open communication in the professional organization also has important implications for the complex university, several of which can be spotted immediately. While there may be many confidential reports, the values of the university do not give strong support to secrecy or the withholding of information. Regardless of what the president or vice president may say about the intended distribution of the findings of a study and regardless of the practices of the past, the institutional researcher in the complex university should assume that the study report will be a public document. The conduct of classified research is suspect, whether within the president's office or in a defense research institute. Moreover, it is inevitable that reports earlier assumed to be confidential will be given wider distribution. Failure to meet this standard of accountability can damage the credibility of the institutional researcher, result in suspended communication between his office and the university community, and minimize both his usefulness and his impact.

Because the institutional researcher is frequently attached to administrative offices vitally concerned with the well-being of the university as an organization, he may fail to realize that not all members of the academic community will place the welfare of the institution in this pre-eminent position. Even in times of apparent institutional crisis, the faculty may respond first to a system of professional values and only subsequently to the needs of the organization.

If the institutional research office is continually used by the administration for the validation of decisions rather than planning and decision making it risks conflict with the professional values of faculty. Professional values suggest that one begin with a question and search for an answer, not an answer in search of justification.

Research which continually suggests clear cut, clean, administratively attractive answers will also eventually become suspect. Although a decisive institutional response may be required, the institutional researcher should not destroy his long term effectiveness by allowing himself to be **used** in short range crisis solutions.

Finally, there is the issue of "problem uncertainty". As a professional organization, the quality of suspended judgment and uncertainty of answers is important. In a sense, the institutional researcher may see his role as antithetical to these aims and view himself as the answer man. He may understand his role as one which reduces rather than increases ambiguity.

To fall into such a trap, however, carries several risks. First, neither faculty members nor academic administrators are necessarily uncomfortable in having to adopt a particular course of action even though the rationale for such a move is incomplete, uncertain, or ambiguous. The professional prefers a genuine recognition of uncertainties, even at times to the point of distortion, rather than over simplification of a problem or premature judgment.

As an academic man, hopefully a scholar, the institutional researcher has a unique potential for bridging the communication and confidence gap which sometimes develops between the administration and the faculty and students. More often than not, however, the institutional researcher fails to play an effective role in this regard, in part because he fails to understand the nature of the university as a professional organization and because he allows his office to be consumed by the "production oriented" forces of the organization.

To open rather than close discussion on these points, I would raise the following questions:

1. What research techniques or other mechanisms are available to the institutional researcher should he wish to study his communication status and performance in a complex professional organization called a university?

2. What is communication? Is it talk, relationships, values, life styles, behavior, or what? and,

3. How does an institutional researcher begin to rebuild communication mechanisms which may have been impaired or destroyed in the past?

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[1] Max Weber. *The Theory of Social and Economic Organization.* Translated by A.M. Henderson and Talcott Parsons. Glencoe, Illinois: The Free Press, 1947.

[2] Amitai Etzioni, *Modern Organizations.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1964.

[3] Victor A. Thompson, "Bureaucracy and Innovation", *Administrative Science Quarterly*, June, 1965. pp. 1-20.

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INSTITUTIONAL RESEARCH IN A SMALL COLLEGE

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On February 1, 1969, Aquinas College welcomed its new President, Norbert J. Hruby, he being the college's second president in thirty-seven years. In his interview held before the entire college community prior to his appointment as president, Dr. Hruby had laid down only one condition to accepting the presidency, namely, that the college would, at once, undertake a procedure which he called a "Self-Study." As he outlined this study, a young faculty member of the psychology department sat listening with fascination as he began to comprehend the beauty of the design, along with a recognition of the obvious parallels of the phrase 'self-study' with psychological counseling, and individual and group therapy. The faculty member was also filled with zeal generated from his background in clinical psychology and from an interest in community organization. And, true to his profession, if the truth be told, he was overcome by the characteristic omnipotent and messianic complex often found in many social reformers. The fact that such a comprehensive procedure could be designed, and by a Ph.D. in English, was staggering to his young imagination.

The faculty member left the presidential interview vowing that if Norbert Hruby became president, he would somehow arrange to be involved in the execution of the self-study. Dr. Hruby did become president and the psychology teacher reached his goal also. Upon presentation of the Master Plan of the Self-Study to the College Community, three weeks after Dr. Hruby took office, he introduced the psychology teacher as the Deputy Director of the Self-Study. My esteemed colleagues immediately paraphrased the title to read, "Deputy Dog", after the more famous cartoon star. How prophetic that paraphrasing was!

As the Self-Study went on, I passed through an unexpected metamorphosis. Starting from the position of a fairly popular and respected faculty member, I soon became aware that many faculty members began to perceive me as one of "them", (meaning administration) while at the same time, the administration saw me as one of "them", meaning the faculty. I went through a personal identity crisis at that point because I thought I belonged to both groups. After awhile, however, the issue was solved when various members of the faculty began to jokingly refer to me as an "administration fink" and only talked to me on "selected topics." I suppose the issue of "whom am I" was solved by everyone else at that time if not for me personally. As of May 2, the end of the Self-Study, I became a neophite institutional researcher with title to so indicate. Having not lived with this new title, I cannot say "who I am" or at least who I will be perceived.

In retrospect, I am only too aware of the enormous gaps in my formal education especially having had no previous military or battle experience, where, as I now understand, the rule "never volunteer" originated. With such military experience, I might have been wiser and less brash and perhaps would have followed that prudent directive.

My experience in institutional research has been limited to the afore-mentioned Self-Study. I have yet to live the life of an institutional researcher as many of you have. Certainly the Self-Study was a gigantic institutional research project in which the entire faculty and administration were involved with as much as 90 percent of the student body taking part at various times. Between 5 to 10 percent of the student body was actively involved with the faculty and administration in doing the research. The structure of the Self-Study organization placed me in a position of coordinating the research activities of approximately 150 people with the untiring efforts of five very dedicated group leaders, and the advice, counsel, encouragement and battle tested support of our outside experts on the Advisory Board. Even with all this support, I still am a candidate for several purple hearts.

Attempting to summarize what I have learned as a result of my experience with the Self-Study, especially as it relates to the topic of this forum, is difficult. Several discoveries about institutional behavior were learned:

1. The existence of massive distrust and suspicion of all groups for all other groups – a type of institutional paranoia which does, if not attended to, paralyze the energies of all individuals within the institution.
2. The inertia of the institution toward change – this seems to be a type of institutional conditioned reflex, as automatic as a protective eye-blink, observed in all groups and most individuals within the institution. If there is an instinct for self-survival, it seems to be most evident in the institutional setting.
3. The proclivity of people to view problems as dichotomous polarities and an apparent need to hold on to one of those poles. Whether this need to view problems dichtomously is just intellectually easier or less anxiety producing is difficult to decipher. I do know that there is great resistence on the part of groups or individuals at either pole to consider the vast gray areas between them. This came out at Aquinas on many issues, e.g., should the core curriculum be constructed around a wholistic (inter or multi-disciplinary courses) or around structural elements (a basic course in each discipline); or, should the college strictly emphasize the intellectual development of the student or is the student's emotional-social growth more important; or, should the student have full competence in deciding the rules of conduct and student life or is this the responsibility and right of the faculty, etc.
4. The closed mindedness of otherwise highly intelligent and educated people to ideas with which they do not immediately agree. This was one of the big surprises to me: to observe people refusing to even intellectually entertain views and interpretations of issues foreign to them, let alone adopt these positions as their own.
5. The isolation of many people from events happening outside the institution and a corresponding unawareness of how they affect the function of the

college. For example, I noted a surprising lack of knowledge about the problems of higher education and the society and the cataclysmic implication of these problems for the college.

On the positive side, several principles of methodology seemed to emerge.

1. The necessity of involving the people who will be affected by change in the actual research and design of that change.
2. The necessity of approaching people where they are psychologically. People must be granted that their position on a topic has some validity (and it usually does). They must be allowed to discover a "flaw or two" in their position. This allows them to see the validity of other positions and brings all sides closer together. An example of this was seen in two groups of faculty who viewed Aquinas as 1) a desperately sick institution near the brink of disaster, and 2) an institution of great strength with no real problems of significance. The extremity of both views was finally seen as a result of visits made by teams of Self-Study members, faculty, administration and students, to 28 different colleges in the east and midwest. Upon returning, the "Aquinas is nearly dead" group was singing the praises of Aquinas and pointing to its strengths hitherto unseen by them while the "Aquinas is heaven" group was suggesting things we should try in order to shore up suddenly discovered problems.
3. The necessity of giving people time to reflect and consider ideas. This seemed to be effectively done by holding open meetings in which "models" of possible solutions were presented and debated in an unofficial, non-policy making manner. The use of external resource people, expert in a given problem, was also most helpful in promoting the community to consider new alternatives to problems.
4. The necessity for continuous exposure to other academic environments on the part of faculty, administration and even students. The visitations mentioned above cost less than a year's salary of a teacher, and provided more education for the college community and more stimulation for developing ideas than anyone could imagine.
5. The necessity of effective communication to and from all segments and individuals within the institution.

My experience, limited as it is, suggests that institutional research is much more than studying problems and recommending solutions. I suspect that the failure of institutional research recommendations rests upon the tendency of many of us to only "study and recommend" and to ignore the other, and in some ways, more important aspect of institutional research reality, namely, that,

1. Institutional research is not research in exactly the same sense as pure research.
2. Institutional research involves political realities.
3. Institutional research is not a process isolated to only a few individuals in the institution.

Let me elaborate on these three points. First, the term research is a bit misleading if taken in the sense the term is used in the physical sciences, or, for that matter, the social sciences. Institutional research is not just the study of sterile problems, slice by slice, variable by variable. It is action oriented – an applied type of research which results in some kind of needed change or adjustment within the institution. Because of the action-oriented nature, the end product is not just a "report" of results but an implication for change. This change will affect people and groups within the institution, and, because it does, it introduces the problems of moving these people toward the needed change and therefore, the political realities of the institution must be considered.

Because institutional research results in change or adjustment, the people potentially affected by this change must, if the research is to be successful, be involved from the start of the research. They must know what is brewing, what is being planned, and participate in the planning, research and execution of the results. They must have ample time to discuss, consider, debate, contribute, and prepare for the results of the study. It is only in this fashion that the reasonableness of change can be seen and accepted by most. It is just this involvement in producing change that the institutional researcher often avoids or neglects. It is comfortable to sit in one's office, directing study after study, publishing results and advising one's president about the cancers which need exorcism. It is quite another thing to be involved in the surgery.

I do not see the institutional researcher "politicing" for a particular position. Rather, I see him acting as a catalyst to bring the problems to the view of all concerned – relying on their intelligence and good faith to accept and produce a reasonable solution.

The topic of this entire conference revolves around communication. Most of us tend to see communication as a process which occurs after the research is completed – and this is generally true when dealing with research in its usual sense. However, when the end-product of the research is apt to affect people in the institution it seems prudent to consider the communication process as beginning with the start of the research. If they help contribute to the research effort, they become ego-involved. They will be much more inclined to "hear" the report and act on its recommendation rather than take it out of their mail box, read the title (if you're lucky), read the summary, (if you're even luckier) and then throw it in the wastebasket or file it under "miscellaneous reports" in their desk drawer.

Communication always involves a sender and a receiver. Very frequently, we, the sender communicate our pearls of wisdom in a most beautiful fashion never suspecting that there is no receiver because those in the receiving position are "turned off" to the significance of what we are sending. They will only "turn on" when they are perceptually attracted to the message, when there is fore-knowledge that the message has relevance for them or to put it in the term used previously, when they are ego-involved.

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THE INSTITUTIONAL RESEARCHER AS COMMUNICATOR: IMPROVING COMMUNICATION CAPABILITIES

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There are many communication problems in IR though they may not necessarily be labeled as such. For instance, writing a funding proposal is a communication problem; so is getting access to university records and to groups of faculty and students. Frequently, I discover, there is a sense of frustration surrounding the generation of action based on research results and their implications. This feeling of frustration is the feeling of communication breakdown.

This communication breakdown results, in part, from an unrealistic dissociation of science and rhetoric; from a conception that the research is one thing and the persuasion is something entirely different; from an operation of designing and completing the study first and thinking about getting your recommendations adopted afterwards. Jacokes in this session has already suggested a solution; but the **problem** may not yet be clear![1]

In this paper, then, I shall identify what I see as a major source of the problem – simplistic models of communication. In addition I shall mention a few of the many complexities that seem to be overlooked by some of the IR's I know; discuss the old moral problem of researcher as advocate, and, finally, suggest specific points at which a researcher's audience must be involved in the research itself.

Simplistic Models of Communication

All of us are beset by the need to simplify our conceptions of the other man's subject matter. This is natural because our invariant means of perception is deciding what that subject matter is like – in our own experiences. Thus, I might conceive of the sophisticated budget systems you are designing and evaluating by invoking memories of my experiences with family finance. That's too simple, you would insist. There are no doubt aspects I've never dreamed of. Let me suggest that I am hearing and seeing in AIR some evidences of simplistic models of communication – of conceptions which miss some very salient variables.

There are those, for instance, who see a transmission between a "sender" and a "receiver" as the communication. This is an inherited model based on analogy with trucking – with the delivery of goods. It is a deceptive analogy when it leads us to conceive of communication having taken place when, simply, a message has been sent.

Others, I note, consider the **message** to be the communication. You assemble, arrange and array the data and sock it to 'em. I once collaborated on a large scale curricular research project. The division of labor was such that my collaborator – an IR professional – assembled, arranged and arrayed the data. The data report went to one of our many vice presidents. Back came the query, "What does all this mean?" He was sent a summary that I had prepared earlier and which, among other things, took into account the questions **he** was asking about the 70-section course being evaluated.

We could have sent the data on computer printout – as some of you report that you do. Perhaps this is as close as you come to Marshall McLuhan's simplistic model of the medium as the message (and, therefore, the communication). Of course, interacting with myriad other variables, the medium **can** make a difference. But seldom, if ever, it is **the** determiner of communication outcomes such as bottom drawer filing.

My purpose here is to suggest – no, to urge – that you work with models of communication at least as complex as your systems models of institutional realities. If you need help in plugging in more realistic conceptions of the jobs you have of inducing responses in others, then seek consultation. You have communication researchers in most of your institutions. Use them. They know the variables that you must consider in efforts to increase the probabilities of success.

Complexities of the Communication Process

This is not the time nor the place to recount all of the sources of differential effects. No scientist must deal with nor account for more variables than the communication researcher. For instance, I have recently published descriptions of over forty sets of variables in listeners alone which can be salient in determining communication outcomes.[2]

There are two factors that I think should be called to your attention here – forcefully. One is a listener-reader factor, the other is a speaker-writer factor. The first factor is probably best known to you as credibility. But this can be a misleading label for two reasons. First, credibility does not reside in the communication source – in the disseminating IR, for instance – but in the perceptual systems of the receivers – in the deans and vice presidents and trustees who **may** decide to understand your research results in the way you think they should. Credibility is the image of you that the other person has. He has no choice but to respond to that image – not to the corporeal you. Second, credibility is not simply believability but a result of the interaction of a number of subfactors. These include not just perceived trustworthiness but also perceived authoritativeness, often perceived friendship, and for the institutional researcher the factor which Rosenberg has isolated and called "evaluation apprehension."[3]

Our research shows that credibility – as defined here – is a salient set of factors in **all** communication. It always plays a role in determining communication outcomes. It even determines what message is perceived – which is not always the one sent. Recent research indicates that – in addition to the potency of the credibility of the speaker-writer – a perceived sponsor or the communicator of the message operates similarly.[4] Certainly this has implications for communications emanating from your offices.

The second important factor selected for discussion here is not as clearly substantiated by experimental communication research as is the case with credibility. But experience frequently points to **persistence** as a determiner of communication outcomes. Persistence is not testable in the laboratory. Persistence demands repeal of the law of negative reinforcement. But effective persistence in communication means more than mere senseless repetition. Advertisers increase sales by one or two or three percent, but you have to do much better than that. Effective persistence comes from finding new ways to validate your recommendations in the minds of the important others. Psychological law demands that you give up trying when you fail. The law of persistence in persuasion means that you try, try again – but with new ways of pointing to the same conclusions.

The Model and the Reality

One result of our meeting will be, I hope, that you will begin to suspect the inbred model of communication-as-mere-transmission. This is not easy. President Toll may be committed to this conception when he says, "Get the reports out where the deans and others can read them," and "show . . ." and "tell. . .." One report at this conference concluded that more important than the communication process may be the feedback. This would suggest that getting out the reports and showing and telling are one thing and the responses of hearers and viewers are something else. With all the vehemence I can muster, let me say that the feedback is as much a part of the process as anything else. It is at once a communication outcome and the initiation of further communication is the real world of human interaction.

This suggests, then, the need for a more realistic conception of the process. I suggest a conception of **continuous mutual induction**; or a conception such as Bauer's **transaction** with speakers and listeners or readers and writers contributing equally and changing equally.[5] It is the changes which take place in all who are involved that constitute communication outcomes. The crucial question is not, "What do I send out?" but, "What contributions of everyone involved will lead to the desired and desirable outcome?"

It is important to remember that the listener-reader is not just a passive receiver – like a dean's filing cabinet. The listener-reader is never a receiver of ideas or thoughts or feelings, he creates them. According to one philosopher of science:

> "The audiences to which scientific publications are addressed is not passive; by its cheering or booing, its bouquets or brickbats, it actively controls the substance of the communications that it receives."[6]

This partnership in communication has a bearing on the recurring moral argument about the (social) scientist as advocate. Jacokes in his paper at this session considers pure science somehow above advocacy.[7] But Ziman, in his **Public Knowledge** points out that:

> "The objective of science is not just to acquire information nor to utter all non-contradictory notions; its goal is consensus of rational opinion over the widest possible field."[8]

This is clearly a rhetorical or persuasive goal, gaining consensus or the acceptance of and adherence to the scientist's findings. Thus, the research design is only as good as its persuasive power; the research design itself – not just the resultant data.

> "We use the 'method' of science, consciously or unconsciously, not only to unravel the secrets of Nature for ourselves but also to reveal them, in full daylight, to our colleagues.[9]

Some of the discussion of reports on DELPHI at this conference have revealed a fear that the procedure shapes the consensus.[10] But it may be that it only speeds consensus. This does not refer to what **ought** to be done, but a charting of the **consequences of what might be done.**[11] The researcher is not an advocate of what ought to be done. He is like the professional parliamentarian who never rules but who advises the chairman – charts for him – what his alternatives are and what would be the consequences of each ruling that he might select. In the parliamentary communication, the chairman selects a consequence and makes a decision. In effective communication between the institutional researcher and the institutional decision-maker, the secrets of (human) nature are the consequences of each available course of action revealed "in full daylight."

Ikenberry, in his paper at this Forum, calls for recognition that the intended audience is apt to be sophisticated in the conduct of research.[12] This is in part true and one of the reasons for the rhetorical power of the research design itself. But also some of the people with whom you must "transact" are not so sophisticated. What can you do to involve them in the consensus? In a general way we have an answer from Jacokes – get them involved in the study.[13] Let me suggest specifically where the audience – sophisticated or not – must be involved to assure successful post-research communication.

There are two essential involvement and commitment points for the audience long before the data are derived: One is at the point of consensus on the nature and urgency of the problem or question; the other is at the point of consensus on the meanings of each of the possible outcomes of the research.

We all resist solutions to problems we have forgotten or that we never knew about. And we have colleagues who resist research on problems that they cannot see. The first communicative step, then, is – as Jacokes notes – bringing the problems to the view of all concerned.[14] Involvement in identifying the problem can lead to the essential commitment, that we want the best solution to this problem, whatever that solution may be. Or we want the most dependable information about the effects of this policy, whatever that information may be.

The second essential communicative step is that of securing – **during the design of the research** – consensus on the significance of each possible outcome. This attempt can only lead to a tightening of the research design. The professional researcher cannot afford to find himself in the position of one master's candidate whose hypothesized correlation between speaking and listening effectiveness did not emerge from the data. Asked why, he listed possible errors in research design; errors in sampling in administration of tests, in the design of the tests, in processing data, etc., etc. He was not prepared to deal with outcomes suggesting that the two skills are not correlated. The time to criticize the research design – both for the researcher and for those from whom he will seek consensus – is not after the data are derived. It must come earlier so the researcher and his colleagues can agree to the meanings of the data no matter which of the possible forms those data take. Hans Jenny has complained in his presentation at this conference that "everyone interprets the data differently."[15] But this is not likely if the prior commitments to interpretations of outcomes are made, for then the interpretations are programed toward consensus.

Conclusion

Communication research – like institutional research – is leading to the discovery of factors formerly unsuspected – or **only** suspected – and moving toward a complex theory of interacting variables, most of which are not always salient in all situations. This being the case, I suggest that to "improve communication capabilities" you become attuned to more of the potential factors in your interactions with others and that you involve communication theorists and consultants in your planning. Remember that this calls for you to follow Jacokes' advice to "... consider the communication process as beginning with the start of the research."[16] And remember especially to involve the potential audience in the two critical steps of recognition of the problem and of commitment to the meanings of all possible research outcomes.

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[6] John Ziman. *Public Knowledge: The Social Dimension of Science.* Cambridge University Press, 1968. p. 9.

[7] Jacokes. *Op. Cit.*

[8] Ziman. p. 9.

[9] Ziman. p. 31.

[10] Norman P. Uhl. "A Technique for Improving Communication Within an Institution," 1970 Proceedings.

[11] Ziman. p. 15.

[12] Stanley Ikenberry. "The Communication Role of the Institutional Researcher in the Large University," 1970 Proceedings.

[13] Jacokes. *Op. Cit.*

[14] *Ibid.*

[15] Hans Jenny. "The Structure and Long Range Behavior of Major Income and Expenditure Components of Private Four-year Colleges." 1970 Proceedings.

[16] Jacokes. *Op. Cit.*

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THE ROLE OF INSTITUTIONAL RESEARCH IN HIGHER EDUCATION IN THE UNITED STATES

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Introduction

Institutional research as a separate and distinct operation is a relatively new phenomenon in higher education in America. Although many of the functions now undertaken by offices of institutional research have been a part of the responsibilities of other agencies in the institutions for many years, only in recent years have most universities established special offices staffed with full-time professionals. Prior to 1955 only ten colleges or universities had offices of institutional research. By 1964 such offices were reported by 115 institutions, and by 1968 there were at least 230 since more than that number of institutions were represented in the membership of the Association for Institutional Research (AIR).

As this new specialty developed within the administrative framework of higher education, a lack of clear definition and delineation of role became apparent. Two major points of view as to the proper role of IR soon were advanced. One group of theorists asserted that the proper function of IR was to experiment with innovations designed to improve the learning process, while another group favored studies to facilitate the solving of operational problems. The former were concerned with long range academic improvement, while the latter were more concerned with management and efficient short range operations. Some men in the field very early began to advocate a melding of these two areas into a useful combination of long and short range planning which would span the spectrum from purely academic to purely management investigations.

The 1969 Survey

Since the operation of offices of institutional research had developed largely from needs of individual institutions and in accordance with the competencies and interests of the personnel involved, there was a need to determine the predominant role assumed by IR on various types of campuses across the land. In planning the development of existing offices and the establishment of new ones it would be valuable to know current practices and the future direction desired for different types of institutions. These perceptions were needed not only from the directors of IR but also from the users of the output from IR, namely, top administrators.

In order to investigate this problem a survey was conducted in the spring of 1969 of all institutions in the U.S. which had personnel with full, active membership in AIR. Questionnaires were sent to the director of IR, who, in addition to completing one himself, distributed six others to his president, vice presidents of academic and fiscal affairs, and deans of education, business administration and liberal arts. The questionnaires were designed to elicit responses regarding the relative emphasis placed by offices of IR on academic and management research both for current projects and as desired for future undertakings of the office. Descriptive information was also collected on the directors' questionnaires.

Appropriate nonparametric statistics (Chi square, McNemar and binomial tests) were used to determine significant associations between major role emphasis and a number of descriptive variables. Also tested were associations between the perceptions of the different groups of administrators and the existing role and between the perceived existing and the ideal roles.

The final sample consisted of officials at 220 institutions. Of this group there were usable responses from 177 of the directors (80.5 per cent) and from 656 other administrators for an overall return rate of 61.4 per cent.

Results of the Study

Descriptive data were collected on a number of variables related to the qualifications and status of the directors and to the operation of offices of IR. Most of the individuals with the major responsibility for conducting institutional research held the title "Director". A few had other titles including "Vice-President", "Dean", "Professor" and "Registrar". The directors (including those with other titles) usually held the doctor's degree (60.5 per cent) or the master's degree (29.4 per cent). Education, administration, humanities, social sciences, psychology and business were the most often reported fields of study in the highest degrees held by the directors. Only five of the respondents reported research as their major field of interest, but many had studied in fields where behavioral science research is often emphasized.

The directors reported directly to the president in 46.3 per cent of the institutions, to the chief academic officer in 17.5 per cent and to the chief fiscal officer in less than 7 per cent. In small private schools, over 75 per cent of the directors reported directly to the president. In 61.6 per cent of the institutions surveyed the director served only part-time in his role in IR. Approximately half the directors in public institutions devoted all their effort to IR while only about one-sixth of those in private institutions (which tended to be smaller) gave full-time to their effort.

In the spring of 1969 the mean length of time the offices of IR surveyed had been in operation as a centralized function was less than five years. The range was from zero to over 41 years. The type of institution made little difference in how early the IR function became established. Only the junior colleges reported that no offices had been open longer than nine years.

As one might anticipate, the size of the staffs, both professional and supporting, in the IR office was related closely to the size of the institutions. Many of the part-time staff members in the graduate institutions were graduate assistants, a group not available on the four-year and two-year campuses. Nevertheless, 64 of the graduate institutions (51.2

per cent of the sample) reported no use of part-time professional staff.

On the questionnaires which were completed by the directors of IR, 24 types of research projects often undertaken by academic or administrative offices in institutions of higher education were listed. One-half of these projects were judged in advance as primarily academic types while the other half were primarily management types. Each director indicated the extent to which his office had participated in each type of project during the past three years. Five alternatives were available ranging in degree of participation from "None, probably would not consider it" to "Undertaken at least once and will repeat as often as needed". Eight of the first twelve projects in the ranking (or two-thirds of the top half) were the management type. The same list of 24 projects was repeated with instructions for the directors to indicate the emphasis they thought their offices should place on these topics during the next few years. Again five alternatives were available, ranging from "Should not be concerned with this" to "Should do studies in this area and complete a series of such studies, including replications, as the need arises". A Spearman's rank-difference correlation of .849 was found between these two rankings, indicating a high degree ($\alpha < .005$) of agreement in the order of the ranks. These rankings dealt only with the frequency with which the studies were undertaken and did not assess the relative effort required or worth gained.

Studies most often undertaken by offices of IR in the sample were: (1) Enrollment projections, (2) coordination of completion of questionnaires, (3) faculty load, (4) space utilization, (5) a study at the request of a faculty group, and (6) development of a data collection system.

In order to get an assessment of the perceptions of the role of IR from the five basic groups of administrators (IR directors, presidents, vice presidents of academic and fiscal affairs and college deans), an estimate was obtained from each respondent of the relative emphasis by his IR office on academic or management research. According to the response of the director, each office of IR was assigned to a major function category of either academic, management or combination effort. It was then possible to test for statistically significant differences within this taxonomy. Where Chi square analysis revealed overall significance in contingency tables larger than 2 x 2, the data were studied further by partitioning the degrees of freedom in an attempt to specify the sources of significant differences.

A number of descriptive factors relating to the institution and specifically to the office or IR were analyzed according to the major role assigned the office of IR by its director. Significant factors found by Chi square analysis included: 1) Enrollment of the institution, 2) public or private status of the institution, 3) highest level of study at the institution, and 4) the major field of study of the IR director. The major role of IR was not shown to be related to: 1) The title or major field of study of the person to whom the director of IR reported, 2) the number of years the office of IR had existed, 3) the full or part-time status of the direcotor, 4) the size of the staff of the office of IR or 5) the highest degree held by the director.

The partitioning procedure accomplished on the significant Chi squares mentioned above revealed the following associations between the major role of IR as seen by directors of IR and the descriptive factors.

1. Institutions with enrollments of 3,000 to 9,999 were more likely than institutions with fewer than 3,000 students to have a combination role for IR than an academic one.
2. Institutions with more than 9,999 enrollment were more likely than those with fewer than 9,999 to have offices of IR which stressed management studies.
3. Private institutions were more likely than public institutions to consider the major role of institutional research to be in the academic area.
4. In graduate institutions (offering degrees beyond the bachelor's the proportion of schools with a combination role rather than an academic emphasis in the IR function was greater than in undergraduate and two-year institutions.
5. Psychology majors among the directors were associated in lesser proportion to the combination role than to the academic role when they were compared with directors with majors in administration, business, education, humanities or social sciences.
6. Directors with majors in science were connected in greater proportion with the combination role than the academic role when they were compared with directors whose majors were administration, business, education, humanities, social sciences, psychology or research.

When all five groups of administrators were compared, there was a significant difference in their perceptions of the major role of institutional research. Partitioning the degrees of freedom revealed that the vice presidents of fiscal affairs perceived the role of IR to be proportionally less a combination effort than an academic one more often than did the directors of IR, presidents and vice presidents of academic affairs. The deans, however, saw the existing role of IR more often as a combination function than as an academic one.

In comparing the perceptions of the existing role of IR with its proposed, or ideal, role in higher education, the focus was upon whether or not the administrators surveyed preferred a change in emphasis. McNemar analysis revealed that for all groups of administrators there was a desire for change from both academic and management emphases toward combination efforts in IR. No differences were found when ideal major role was compared with the type of institution – highest degree offered or private or public status. There was a significant difference in proposed major role as perceived by the directors of IR at institutions of varying enrollment size. When enrollment category 3,000 to 9,999 was compared with the category of less than 3,000, it was found that the institutions in the larger category were more often associated with the perceived need for a combination effort than a totally academic effort. Other comparisons in connection with the size of the enrollment and ideal role were not significant.

Conclusions and Recommendations

The findings of the study were the basis for the following conclusions:

1. Institutional research, although developing at a rapid pace, was in 1969 still a relatively immature area of

institutional life at most institutions surveyed.

2. In many instances the function was conducted in conjunction with other duties by the responsible individuals. This lack of full-time effort often was the reflection of a commitment to the concept of research of institutional life by a small institution where resource limitations prohibited assigning a full-time director to the job. On the other hand, it appeared to reflect a lack of commitment in institutions where full-time effort was warranted.
3. At many institutions there was a need for better communication of the role of IR to the institutional staff, especially at the level of the college dean.
4. There were many different types of studies undertaken by institutional research. The needs of the institution and the background of the researchers were related to the studies done.
5. There was agreement among the groups of administrators surveyed that the role of institutional research should become a combination effort into which would be melded academic and management studies for the purpose of improving the overall functioning of the institution.

The findings and conclusions of the study suggested the following recommendations:

1. Further investigation should be made into the specific qualifications for various types of research (behavioral science, systems analysis and organizational) held by directors of institutional research. This should be done with the ultimate objective of developing specific training programs for individuals who desire to pursue a career in this field.
2. Directors of institutional research should be prepared in several key areas in order to be able to cope effectively with the research and administrative problems they encounter. Programs of preparation for directors of IR should be developed to include courses in statistics and research design for the behavioral sciences, techniques of historical and survey research, cybernetics, data processing and systems techniques, public administration, public finance, business management in higher education and human relations.
3. An attempt should be made to have the full-time (or near full-time) effort of at least one professional in each office of institutional research. While this may not be possible in some small institutions, it is a goal to seek if institutional research is to attain its potential value.
4. There should be developed among the chief administrative, academic and fiscal officials, along with the director of institutional research, a clear understanding of the role of IR at each individual institution.
5. A concerted effort should be made, both on a national scale and at the institutional level, to inform all elements of the academic community of the role and value of institutional research in higher education.
6. Students, especially at the graduate level, should be utilized to supplement professional staffs in offices of institutional research. This would serve two primary purposes: 1) It would provide additional talented manpower for immediate use, and 2) it would serve a training function for providing for the growing future need for institutional research personnel.
7. Each office of institutional research should develop a viable rationale for focusing on both the academic and management elements of institutional life in studies instrumental in providing information for decision-making. This rationale should enable the office to make a unified, rather than fragmented, effort.

This report is based on a dissertation entitled, "The Role of Institutional Research in Higher Education in the United States" completed by Robert K. Roney at The University of Tennessee in March 1970.

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COMMUNICATING WITH STATE AGENCIES

THE ROLE OF HIGHER EDUCATION INFORMATION SYSTEMS IN STATE-WIDE PLANNING

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WICHE

An information system, in the classic sense, is generally referred to as a system which provides, in a timely fashion, the information necessary to enhance the decision process. Rosove, in his book **Developing Computer Based Information Systems**, draws a very useful distinction between data and information:

> "A datum is a fact in isolation. Information is an aggregate of facts so organized, or a datum so utilized, as to be knowledge or intelligence. Information is meaningful data, whereas data, as such, have no intrinsic meaning or significance."[1]

Rosove goes on to define an information system as:

> "The formal or rationally planned means whereby managers receive and transmit information".[2]

For our purposes today, consider a higher education information system as the technologies and methodologies which provide sufficient information to describe the state of the educational system in order to facilitate and improve decision-making which influences the system. Having said that, what I have in mind is that information has meaning only in the context of the individual or group of individuals who can make use of this unique array of data in carrying out their responsibilities. Further, it must provide information regarding not only the institutions of higher education but also information regarding the various related areas such as secondary school enrollment, state economic status, potential job markets for graduates, etc.

I propose that we look at higher education information systems for state-wide planning in terms of three issues: a) Whether? b) who? and c) how?

Whether – the state-wide planning function for higher education can be improved by additional quantitative information, that is, shall we do planning by the numbers.

The second issue is Who. **Who** are the decision makers in the planning process? Are they the institutions? the coordinating agency? the state budget office? the legislature – the public? who are these decision makers?

Thirdly, **How** do such planning decisions take place and in what manner should information systems be developed to support the decision process? Are planning decisions made independently by the various sectors of the system or is higher education planning coordinated in some fashion? Further, should the information system be developed in a centralized manner to uniformly support all decision-making? or in a decentralized manner to support decision-making at various levels?

The first issue is: Whether the state-wide planning function for higher education can be improved by additional quantitative information. It seems to me that most institutions of higher education, whether public or private, exist not as autonomous units but as an integral part of the state system. Such systems usually operate with limited resources. Limited resources in terms of dollars, facilities, equipment, and staff available to support the system; and limited resources in terms of qualified students who, of course, are an integral part of the institution. To make the most efficient use of these limited resources, it is necessary to coordinate the efforts of each of the components of the system in order to maximize the total effectiveness.

If you accept the concept that planning decisions are concerned with changing the state of the system, then it follows that decision-making may be improved by providing the decision-maker with additional information which describes both the present state of the system and the long-range implications of alternative planning decisions. Thus, it seems to me that we must conclude that quantitative information may be a prerequisite to virtually any effective state-wide planning process. The large-scale nature of higher education operations is such that rational planning requires quantitative descriptions of the state of the system. Therefore, we should do our planning by the numbers.

The second issue, Who are the decision makers, depends in part on the political processes of each state system and in part on the status of the higher education information system or the manner in which information is provided to these decision-makers. By this I mean to suggest that occasionally the situation arises where the responsibility for decision-making rests with an individual or an office who may lack access to the information pertinent to the decision. The man who has the information and the man who needs the information may not communicate. In some areas, the imbalance that exists between the information available and the decision process leads one to be grateful that our educational systems are not more chaotic than they presently are.

The status of higher education information systems, particularly as they relate to the state-wide planning process, is perhaps described by the Middle East parable of the "Tarantula and the Camel". It seems that an Arab camel and an Israeli tarantula were crossing the Negev Desert together. When they arrived at the Jordan River, the tarantula said to the camel, "Please let me ride upon your back, so that I may cross the river safely". The camel thought about this for a moment and then said, "If I let you ride upon my back you may bite me and I will die". The tarantula replied, "Of course I won't bite you – if I should bite you while we are in the river you may die, but then I would drown and what purpose will that serve?" The camel agreed that that was reasonable, so the tarantula climbed upon the camel's back and they started across the river. The Arab camel and the Israeli tarantula were half way across the river when suddenly the tarantula bit the camel. As they started to sink, the camel turned to the tarantula with a puzzled look on his face and asked, "Why did you bite me?" To which the tarantula replied, "Oh, You didn't know? That's the way it is in the Middle East".

How many "tarantulas" in your state? How often does one bite the camel of information in the middle of the river of planning and decision-making. The time has come for the camel and the tarantula to cross the river together. It is necessary for the institutions and the state agencies to work together in the development of information. Thus, the development of higher education information systems, particularly with regard to state-wide planning, is not the province of only the institutions. Nor is it the exclusive responsibility of state agencies. The development of higher education information systems must be undertaken cooperatively by both the institutions and the agencies in order that the resulting information system will serve the management needs of the institution and yet provide quantitative data required by the state agency.

The third issue, How do such planning decisions take place and how is the information system developed to support the decision process, is a compelling question facing many states and institutions as they embark upon the development of advanced information systems. With regard to statewide planning one is immediately faced with the question of whether such a system will be created in a centralized or decentralized manner. For example, should the state create a large central information system which collects data from all of the educational units within the state or should such systems be created in a decentralized fashion at the various institutions?

Lawrence discusses planning by objective and points out that the information requirements for statewide planning and evaluation of higher education may be viewed in terms of the different types of objectives involved.[3]

For example, at one extreme are "Mission objectives" which describe, in general terms, the purposes of higher education. These objectives are determined by the political processes of the state and require tradeoffs between competing social and welfare programs at the state level.

At the other extreme are "Process objectives" which have to do with the methods by which the products or outputs of higher education are produced. The responsibility for decisions regarding the process objectives must be in the hands of the experts in the field. The manner in which integral calculus is taught to freshman students is not a political question but one that depends upon the needs and capabilities of the students and the technology available.

Lawrence concludes that the existence of the various types of objectives in higher education requires different planning and management levels. But whether one views higher education in terms of objectives, or in some other framework, it should be clear that the nature of our higher learning processes are such that major decision-making does, in fact, occur at various levels within the state system. Decisions, such as, whether to create a new state university are the province of the legislative and executive branches of the state. However, the determination of the classes to be taught at the institution and who will teach the classes, properly lies with the school administration. Thus, decision-making and, therefore, information requirements exist at various levels within the state system.

If we adhere to the general definition of information, i.e., that which improves or facilitates the decision process, then information systems must be designed to provide the decision-maker with the necessary information in a timely manner. It seems to me that this can best be accomplished by the cooperative development of decentralized systems. Systems which are designed to both complement the needs of the various levels in the state and still serve the detailed, and perhaps more immediate, need of the institution. Unfortunately, the complexity of the higher education decision process does not lend itself to a clear heirarchial structure. The various forms of information cannot be aggregated nicely in a manner which supports higher level decisions. Thus, it is often necessary to array the same data in various forms for different levels of decisions. For example, the date element "Course Enrollment" is aggregated in one manner to determine course loadings for departmental decision-making; and in another manner to determine degree program enrollments for institutional planning. Further, we may aggregate this particular data element in a third manner to determine total FTE enrollment for state-wide purposes. Such alternative uses of similar data may be accomplished by developing information systems on the basis of decentralized but compatible data bases.[4] The establishment of common, uniform data elements throughout the system will permit institutions and state agencies to exchange data in a comparable form, thereby facilitating alternative aggregations and arrays of data.

The notion of compatability and common, uniform data elements is the underlying premise of decentralized information systems. It permits each subsector of the system to define its own information requirements, i.e., aggregate the data elements in a manner which best serves their internal decision processes. Moreover, each subsystem can provide comparable information for state-level decisions by aggregating the data elements in a uniform fashion.

The development of decentralized systems which will improve both institutional management and statewide planning appears to be a feasible concept provided the parties concerned are willing to commit the resources necessary to provide modern planning technology. Resources in terms of dollars and facilities, resources in terms of equipment, and most important, resources in terms of sophisticated analysts who can convert the present mass of data into meaningful information.

In addition to providing resources, the institutions and agencies must accept the concept of compatible information systems. Moreover, the institutions and agencies must achieve a high degree of cooperation and communication both within the various sectors of the state and between these sectors. This will require not only the cooperation on the part of the institutions and the state agencies but also some degree of compromise by each. Fred Balderston, of the University of California, recently made the comment that all of us in higher education, regardless of where we fit in the system hierarchy, have one thing in common: We seek obedience from those below us, and autonomy from those above us.

At the campus level it must be recognized that the development of meaningful and descriptive information is in the best interest of both the institution and state. Further, at the state level, it is necessary to recognize that certain types of information and planning decisions are the perogative of the institutions.

The state should be concerned only with that information which directly affects the state-level process. Mayhew, in a recent report to one of the state coordinating councils, recommended that:

> "One of the major contributions which coordinating agencies can make is to provide broadly generated and valid data upon which state-wide decisions can either be based or made in the appropriate context of valid information."[5]

Although I concur with Mayhew's recommendation I would caution that the development of "broadly generated and valid data" requires the willing participation by all the sectors of higher education.

The successful development of information systems requires an atmosphere of mutual trust and respect. It requires each of the parties to cast aside their suspicions of the other sectors of the system and, for the moment at least, hide their aspirations for greater control and authority within the system. Moreover, it requires full disclosure of information.

As MIT's Jay Forrester commented,

> "It appears that we can use computers and information technology to create either more confinement or more freedom. One can say that the way to get a coordinated organization is to specify exactly what every person is to do. But there is another approach that starts by seeking a structure of boundaries which first insure enough individual freedom to guard against the oppressive restraint of initiative, and within this objective, create coordinating interfaces that help to achieve a common purpose. I see very little effort yet toward designing organizational structures for the benefit of the individuals; instead, people are trying to refine and strengthen the authoritative hierarchy, an organizational form which has probably outlived its time."[6]

In my opinion, Forrester's comments are as equally appropriate to higher education as they were to business management. The advent of information technology for higher education can result in either greater separation and conflict between the institutions and the state agencies, or it can result in a higher level of cooperation and coordination. It is the responsibility of each of us working in the area of higher education information systems to insure that the application of this new technology results in a greater spirit of cooperation and coordination. We must discard the notion that "no information is good information" and adopt a doctrine of full disclosure.

Some educators I talk to are concerned that the doctrine of full disclosure may lead to significant reductions in the appropriations for higher education. "My gosh", they say, "If you tell the legislature how much it costs to educate a graduate student in Neolithic Epistemology they will cut my appropriation". Chances are they will cut the appropriation anyhow, at least now you will know why.

Seriously, we in higher education have to decide whether to permit decision-making to continue on an emotional basis rather than a rational basis. If we expect rational decisions to be made regarding higher education, we have to provide the information necessary for intelligent decision-making. The premise that information will be used against us in an "unreasonable manner by unreasonable men" is simply no longer valid. The lack of information forces unreasonable decision-making based on irrational criteria, emotional responses, and arbitrary constraints – management by crisis rather than orderly planning is the result.

In summary, we have attempted to look at a few of the issues regarding the role of higher education information systems. The question of whether state-wide planning in higher education can be improved by additional information, I believe, can only be answered by a definitive yes. Planning for large-scale, complex systems can be significantly improved by additional information regarding the state of the system and the long range implications of alternative planning decisions.

The second question of "who are decision-makers in higher education", has no simple answer. We must recognize that there are various decision-makers up and down and throughout the system. Thus, the question must be considered in terms of the decision structure of each individual state and the various objectives of the state system.

The third question of "how the information system should be developed" may be answered in terms of a cooperative development of decentralized but compatible information systems. This will require the determination of common, uniform data elements and the willing adoption of the doctrine of full disclosure.

I have attempted to present to you a broad overview of the role of higher education information systems in state-wide planning. Admittedly, this overview has been cast in a framework that is biased, that of decentralized systems based on cooperation and coordinated data compatibility. There are other frameworks to view the role of higher education information systems. The most obvious of which is the centralized system which collects all information at the state level. Whether you believe in centralized or decentralized systems, or some combination thereof, I think you will agree that one of the more important aspects of any information system is the manner in which it processes data to aid the decision-maker.

[1] Rosove, Perry E., *Developing Computer Based Information Systems*. (Wiley and Sons, New York, 1967). p. 3.

[2] Ibid. p.4.

[3] Lawrence, Ben. "Toward a Concept of Statewide Planning for Higher Education", an address to the 1970 AIR Forum, May 16, 1970.

[4] Lawrence, Ben. "Compatible Management Information Systems", WICHE MIS Technical Report No. 1, Boulder, Colo., 1969.

[5] Mayhew, Lewis B. "Analysis and Recommendations Concerning the Expansion of Higher Education in Minnesota", Report to the Minnesota Higher Education Coordinating Commision, April, 1970.

[6] Myers, Charles A., ed., *The Impact of Computers on Management*, MIT Press, Cambridge, Mass., 1967. p. 276.

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TOWARD A CONCEPT OF STATEWIDE PLANNING FOR HIGHER EDUCATION

Ben Lawrence
WICHE

The purpose of this paper is to:

1. Describe in general terms, a **conceptual approach** for statewide planning of higher education.
2. Describe in general terms, the **information required** by this conceptual approach, and
3. Discuss the **implications** this conceptual approach might have **for the organization** of statewide **planning** activities.

In the discussion that follows, planning and evaluation are used in a specific sense.

Planning is used to describe that set of activities required to develop a plan to guide **operational** management decision-making. Such a plan is a constraint or guide to the decision-maker with the understanding that regularly maintained procedures are established for bringing about necessary changes in the plan whenever they are needed.

Evaluation is to describe that set of activities required to determine: a) The extent to which the plan is being implemented and b) the degree to which the plan (if implemented) is having the desired effect.

Unless otherwise specified, the term "planning" shall mean "planning and evaluation" in the above senses for the purposes of this discussion.

The concepts that follow are somewhat rigidly described. Analogies are used to illustrate certain approaches which would be unacceptable if pressed too far. They are used for the sake of clarity, with the hope that a useful discussion of statewide planning concepts will follow.

The Conceptual Approach

One can visualize the approaches to information collection and analysis for planning purposes on a continuum. At one end of the continuum is the collection and structuring of all possible data for analysis purposes to meet any requirements by the planners – the so called "data bank" concept. At the opposite extreme is the collection of only that information necessary to meet the requirements of the planners. For planning purposes, of course, it would be ideal to have all of the necessary information appropriately structured and available for analysis at the whim of the decision-maker. Limitations upon our technical capacity and the dollar costs of such a system suggest that, for the near future, this approach is not feasible. The other end of the spectrum, likewise, has its limitations in that it requires that we determine in advance the kind of problems that the decision-maker will face. Somewhere in between these two extremes is the conceptual approach of "planning by objective".

"**Planning by Objective**" is an approach to decision-making that attempts to: 1) Pre-determine the objectives or goals to be accomplished, 2) identify the alternative methods by which the objectives may be met, and 3) make decisions in light of the objectives and the alternatives available.

Planning by objective attempts to get a relatively clear understanding of the goals to be attained and the paths to be followed in achieving the goals; thus, ruling out a very large number of possible goals and routes. This action greatly reduces the amount of information and analysis that must be available to the decision maker. This brings an information system, that will meet ninety-five percent of the decision-makers needs.

Given our present understanding of the processes of the higher education system, planning by objective appears to be a good conceptual approach. The following arguments support this suggestion:

1. It is economically and technically feasible.
2. It is consistent with present levels of understanding of the higher education processes.
3. The very process of determining objectives provides greater understanding of the processes of higher education.
4. The very process of determining objectives helps to describe the information required for statewide planning.
5. It enables decentralization of decision-making.
6. It facilitates resource acquisition and allocation.

It should be noted that the "data bank" concept has one very desirable feature, namely that with all conceivable information available for analysis, highly desirable but overlooked objectives would be more easily identified which may result in the allocation of resources to greater total benefit than using the planning by objective approach. However, these approaches are not mutually exclusive. Hopefully as technology advances, we may have the benefit of both.

It is a corollary of the planning by objective approach that the information required for planning purposes is directly related to the objectives of the system. Some people argue that information is information – what does it have to do with objectives?

A survey of stated objectives for higher education reveals at least two significant problems. First, the nature of these objectives range from specific and detailed to broad and general. It soon becomes evident that there are several levels of objectives. It is not only important to know "**where** you are going" but "**how** you are going to get there". Secondly, information requirements associated with each kind of objective are different. This suggests the need to classify objectives for planning and determination of information requirements. In part this is needed to assist us in understanding each other in the discussions of the purposes and processes of higher education. Each of us tends to emphasize that particular aspect of higher education that is important to us. A categorization of types of objectives may assist us in recognizing that our respective views are not necessarily mutually exclusive. We may, in fact, gain some appreciation of the "other" point of view.

For the purpose of these discussions, the following classification is suggested.

Mission Objectives – Those broad objectives that describe the purpose of higher education. They answer the question: "To what end?"

Scope Objectives – Those objectives that indicate the breadth of the application of the objectives. They speak to the degree of opportunity to function or participate.

Output Objectives – Those objectives that describe in operational terms the products of higher education. They differ from mission objectives in that they deal only with the immediate product of the institution rather than the broader individual and social long-range goals.

Quantitative Objectives -- Those objectives that indicate how many or how much of each of the output objectives are required in order to fulfill the purpose objectives.

Process Objectives – Those objectives that place restrictions on or set desired operating conditions for the processes by which higher education generates its own outputs. Process objectives have to do with faculty mixes, student faculty ratios, class size, physical environment, instructional modes, relationships between research, community service, instruction, etc.

Some will argue that the above categorizations mix objectives with target values, constraints and definitions of variables. I will concede this point, but have chosen to call them all "objectives" in order to focus attention on the problem and to communicate effectively with those who do not draw such distinctions.

What information is required for statewide planning and evaluation of higher education, using the above conceptual approach?

One approach to answering this question is to consider the information requirements associated with each category of objectives.

Mission Objectives – Mission objectives describe in general terms the purpose of higher education. They are not concerned with the immediate products of higher education but the benefits that those immediate products bring to society and the individual. The immediate product of a university might be a Ph.D. in environmental studies, but a mission objective might be to ensure a suitable environment for man.

The information requirements necessary for determining mission objectives and evaluating progress toward their achievement focus on: 1) Societal and individual needs, 2) information that will assist in establishing priorities for these needs, and 3) information that will help determine relative importance between societal and individual needs. This calls for data concerning hunger, shelter, leisure, mental health, national defense, crime, oppression, etc.

Scope Objectives – Scope objectives describe in operational terms the degree of opportunity to participate in the processes of higher education. For example, in order to fulfill the established mission objectives, what percentage of the population must have access to higher education at what time or times in life? To what individuals or segments of society should the research capabilities of the institution be made available?

The information requirements necessary for determining scope objectives focus attention on demographic and curricular program data, admission policies, beneficiaries of research and public service efforts, etc.

Output Objectives – Output objectives describe in operational terms the products of higher education that contribute to the achievement of the mission objectives. The information requirements necessary for determining output objectives and evaluating progress toward their achievement focus on the various production functions of the institution. The specifications need to be described in terms of resources or inputs.

There is also a need to describe the products of higher education in output terms. If, for example, a mission objective of higher education is to ensure a suitable environment for man and production of Ph.D.'s in environmental studies is determined to be an output objective of higher education contributing to that mission objective, the Ph.D. in environmental studies must be described in performance terms. Describing the Ph.D. in terms of resources invested in producing the degree winner does not ensure a capability of contributing to the mission objective.

The information requirements necessary to developing and measuring output objectives are as yet totally undefined. No serious efforts have been undertaken as yet in this direction. The Western Interstate Commission for Higher Education in cooperation with the American Council on Education and the Center for Research and Development in Higher Education at the University of California at Berkeley have such an effort currently underway but there is nothing to report as of this writing.

Quantitative Objectives – Quantitative objectives indicate how many or how much of each of the output objectives are required in order to fulfill the mission and scope objectives. When a person feels hungry he can enter a restaurant to satisfy his hunger – his mission objective. He indicates to the waiter that he desires to eat and the waiter responds by asking "What will you have to eat?" - an output objective of the restaurant. The person looks over the menu and selects those items that meet his taste and health requirements in the **quantities** that are necessary to satisfy his hunger.

In the same way, quantitative objectives provide numerical indicators to the output objectives indicating which and how many of the possible products of higher education are necessary to meet the mission objectives. While we have not yet reached any degree of consensus as to the outputs of higher education and their contribution to the mission objectives of higher education, we do undertake to collect a great deal of quantitative information such as:

- Manpower needs and degrees produced and
- research requirements and dollars spent on research, etc. While this is useful information, it will be much more meaningful when it can be related to objectives in each of the above categories.

Process Objectives – Process objectives have to do with the methods by which the products or output objectives of higher education are produced. It is conceivable that in the drive to produce an output of a specified quality at as low a cost as is feasible, institutions might forget the humanness of students. While the quality specifications might be fully met, it is conceivable that some of the more subtle developments in the student or the product might be overlooked simply because they could not be specified in the quality control specifications.

Some people believe that it is not only necessary that we produce a B.A. in mathematics with a specified competency level, but that it is important that he be produced in a specified environment and over a specified duration of time. Process objectives for the environment in which the products of higher education are produced can not, at this point in time, be empirically shown to effect the outputs of higher education in every case. However, there is considerable evidence that students, faculty, and the public believe that there is a relationship.

The information requirements for process objectives focus attention on faculty qualifications, physical space factors, student faculty ratios, equipment, didactic materials, time schedules, modes of instruction, etc.

Implications for the Organization of Planning Activities

What implications does this conceptual approach have for the organization of statewide planning activities?

While state legislatures are increasing their involvement in higher education and many levels of decision-making are involved in planning for higher education, for purposes of discussing this conceptual approach only two levels of decision-making will be considered – the coordinating agency level and the institutional level.

There are at least three implications for the organization of state-wide planning activities given this conceptual approach. First, the nature of the kinds of objectives described, suggests groupings which may be related to decision-making levels for planning purposes.

Mission objectives and scope objectives by their nature are determined by the political process. Trade offs between individual and social goals must be determined by the representatives of the people that make up society. Accordingly primary, but not exclusive, responsibility for information collection, analysis and interpretation and subsequent development and recommendation of these planning goals should be vested in an agency that stands close to the legislative process and removed from the self-interests of the institutions – the coordinating agency. Institutions must of course be involved in the planning process that determines mission and scope objectives even though primary responsibility for ensuring that such planning is done would rest with the coordinating agency. The planning process in any case must include inputs from each of the major constituencies concerned with higher education.

Output objectives and process objectives are related to the specification of the feasible products of higher education and the determination of the processes by which the products are to be produced. The primary responsibility for determining these objectives must be vested with those that must produce the product. The institution knows better than others, the products it can produce and the processes by which it can economically and feasibly produce the product. The institution will, of course, need to do consumer research to determine its product line and to determine need for new products. Without adequate consumer research and modification of the product line, both society – as represented by state legislatures – and the individual – as represented by the students – may become impatient with the institution. If this happened within the industrial setting, a new company would eventually arise to meet consumer demand. Within higher education, except for private higher education, it is difficult to create a new institution. Accordingly the state needs consciously to encourage innovation and the development of new products by the institution in keeping with observed individual and social needs.

Quantitative objectives indicate the quantity of the output objectives – the products of the institutions – needed to meet the mission and scope objectives determined by the political processes. Accordingly the primary responsibility for development of quantitative objectives must be vested with the same agency that recommends the mission and scope objectives.

A second implication for the levels of decision-making in statewide planning given this conceptual approach concerns the need for sensitivity to individual and social needs. Private higher education represents the only current alternative to the public institution. This alternative is already limited to the reasonably affluent. Given a statewide planning approach, further limitations may be placed on this alternative. Statewide planning efforts already place one constraint on this alternative by considering the existing services of the private sector when determining the services necessary for the state. If the desired service is available in the private institutions, there is some tendency not to provide it in the public institution. As private institutions seek state and federal support, the degree of freedom of choice of an alternative to the publicly determined trade offs between individual and social goals will be increasingly limited. It is not likely that tax dollars will support private education without a substantial measure of control.

Accordingly, statewide planners must develop information collection, analysis and interpretation abilities that are sensitive to individual and social needs and desires and have the capability of responding to those needs throughout the decision-making levels in a reasonable period of time.

A third implication of this conceptual approach for the organization statewide planning activities is related to operational or management decision-making. Given mutually agreed upon, well specified objectives for each level, the management of the institutions and the system can be highly decentralized. This encourages innovation within the limits of objectives. Decentralized decision-making shortens the span of control making it possible for the decision-maker to evaluate the effects of his decision rapidly. Since the decision-making authority can be placed in close proximity to the situation concerned, he can observe the effects of his decision and make adjustments as necessary within the limits of the objectives.

It is important to note that the decision-maker also becomes an important part of the evaluation and information collection, analysis, and interpretation network. He can rapidly see the effect of the adopted objectives on the local situation and suggest improvements.

This analysis suggests that statewide coordinating agencies should concern themselves with the collection, analysis, and interpretation of data related to mission, scope, and quantitative objectives. They should recommend to the legislature specific objectives in these areas and evaluate higher education against these objectives.

Such agencies should also recommend that output and process objectives be the primary responsibility of institutions and encourage institutions to develop expertise in the collection, analysis, and interpretation of data related to those objectives. Institutions should produce a menu of feasible products (output objectives) and describe the process (process objectives) by which these products should be produced.

While this approach is highly generalized and requires considerable thought and clarification, it attempts to provide those responsible for the direction of our higher education institutions and systems with a concept for planning. Of course, this concept is of no value without a knowledge of the mission of Higher Education. Planning decision number "one" cannot be made unless we know where we are going. "If we don't know where we are going, any road will get us there".

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DATA REQUIREMENTS OF A STATEWIDE BOARD OF HIGHER EDUCATION

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Data required by a board of regents which acts as a governing and coordinating board are more comprehensive than that needed by a board which has only a research function. A board of regents may develop and demand the use of specific forms for budgeting and year-end financial reporting. This work requires a review of the current use of materials by the institutions and the determination of how that information is to be used at the state level. Regents may prescribe methods of inventory control, internal controls of cash and accounts receivable, audits, etc. The agency with research responsibility only has neither the authority nor the responsibility for accumulating specific kinds of financial data from the institution and may have difficulty in determining the procedures currently practiced. However, this does not prohibit the board from conducting research in many areas and making recommendations based on the available data and documentation.

The legislative act creating the statewide board sets forth its authority and responsibility and sets forth legal limitations. In addition to legal limitations there are functional limitations at the state level and from the institutions which determine the kinds of data that the agency will accumulate and how it may manipulate the data. At the state level the agency may be limited by funds. This is one of the determinants of the volume and quality of performance given by the board. Without competent people little can be accomplished within the agency regardless of its legal authority and responsibility. There are enough sterile coordinating agencies in existence to prove this statement.

Functional limitation on the ability to accumulate data at the state level may not be within the agency but within the institution. The proper documentation may be prepared at the state level, accurate research may be performed, and communication with the institution may be very clear; however, if the institution does not have the interest, equipment, and competent people to respond to the agency's demands, there is little need for a management information system because there will be little information flowing from the institution to the state agency. There is no normal or average situation to come from the above discussion. The characteristics discussed are merely yardsticks of performance and are used to determine degrees of activity by both institution and agency.

There are areas in which the institution and the agency need frequent communication. These include: I) Sources of Funds, II) Budgeting and Financial Reporting, III) Students, IV) Faculty and Staff, V) Facilities, and VI) Curricula.

I. **Source of Funds**

A) Sources of Funds
    Federal Government
    State Government
    Local Government
    Student Tuition and Fees
    Auxiliary Enterprises
    Other Sources
B) Appropriation Requests Procedures
C) Political and Economic Restraints

A) Sources of Funds – To be aware of the financial position of all institutions within its jurisdiction the statewide agency should receive complete financial information. This information should be comparable and consistent from year to year. The agency should be aware of and indeed make recommendations concerning the use of certain funds. For example, the agency should have information on contracts, grants, and other sources of funds from foundations, individuals, or the federal government. Many statewide agencies receive only information concerning state appropriated funds and this is inadequate data for a sound management decision-making process. Complete data is required concerning the use of federal, state, and local funds, student tuition and fees, auxiliary enterprises, and funds from other sources. The recommendation for an increase or decrease of student tuition fees should be a part of the agency's responsibility and authority. With increasing competition for the appropriation dollar and with the increasing cost in higher education, student tuition and fees will be viewed as a means of offsetting the demand for state funds. Profit or loss from auxiliary enterprises cannot be overlooked in the total institutional financial review. Most business managers are aware that whether a profit or loss is incurred in dormitories may depend on accounting procedures such as the allocation and distribution of plant maintenance and operation expenditures.

B) Appropriation Requests Procedures – The statewide agency may have the responsibility for determining the appropriation request procedures, if so, there should be an objective approach to requesting funds for each institution by academic area and by course and/or student level. Many formulae incorporate course level by determining the number of positions for different course levels of responsibility; however, this approach does not recognize the difference in academic program costs. Obviously the ultimate goal in appropriation requests would be that of putting money where you produce the best product. This kind of evaluation assumes the use of cost benefit analysis which is rarely accomplished today at the state level.

C) Political and Economical Restraints – Higher education is competing with Medicaid, Welfare, and even elementary and secondary education for a limited supply of state dollars. Ultimately this competition will require the justification of appropriation requests in terms of cost effectiveness. We should prepare for more and sharper questions from the legislature concerning the use of all funds and especially state funds. Many states simply are not financially able to fund the programs which advocates of higher education, including the state agency, feel are necessary. Many taxpayers and parents of college students have rebelled at an increasing dollar per unit for higher education even though more expenditures for higher education will result in economic gains for the individual and the nation.

II. Budgeting and Financial Reporting

The state agency should receive from its constituency annual budgets and financial reports which will be comparable among institutions and consistent from year to year. Fund accounting should be a necessity and may be achieved only if the agency has enough muscle to so designate. Institutional budgets should be presented to the agency with information concerning the following areas: Current Funds–Unrestricted, Current Funds–Restricted, and Plant Funds. The agency may also be interested in Endowment Funds and Annuity and Life Income Funds. A budgetary review within the academic year will be helpful in the evaluation of the institution's financial position. A Chart of Accounts may be prepared by the agency for all institutions within its realm of authority and if not in detail the Chart of Accounts should identify organizational units, programs, functional classification, and budgetary units or cost centers. Object classification expenditures should also be defined and should be comparable between institutions.

III. Students

Comparable student data at the state level is a necessity for the state agency. The Student Related Data Element Dictionaries prepared by the WICHE MIS Program can be used for many purposes including number of FTE students, in and out-of-state students, foreign students, student age, etc. With these elementary kinds of information the institution will be able to conduct research in retention and attrition rates, projection of FTE students, and other student related problem areas.

IV. Faculty and Staff

The state agency should receive comprehensive faculty and staff data from the institutions. The agency and/or the institution should conduct comprehensive cost studies, including the average cost per credit hour and contact hour by academic area by course and/or student level. One of the major areas of discussion on the campus today is that of faculty load requirements and what should the faculty be doing with their time, including professional activities such as teaching, advising, academic administration, etc.

V. Facilities

For several years higher education has been able to approach state legislatures with an increasing percentage of increase in the number of graduate and undergraduate students. This percentage of increase is now declining and will continue to do so. The increase in number brought about the expansion of physical facilities on most public college and university campuses. From the period 1960-1970 many public colleges doubled or tripled campus facilities in square footage. This growth will not continue and a more effective use of space will be demanded. The state agency should be instrumental in determining whether or not facilities are needed and what kinds of facilities are needed. Sound management procedures require a working knowledge of all campus and other facilities which may be used for the educational program, such as off-campus centers, rented space for off-campus activities, etc. The agency needs to have available a perpetual inventory of all facilities with a yearly space utilization study. There are situations where even the institution does not know how much space is available or how space is being used. The WICHE Data Element Dictionary, Facilities related section may be helpful in determining the information required for comprehensive facilities planning and use.

VI. Curricula

Defining a course or even an academic area is not always easy for comparability among institutions. The Office of Education of the Department of HEW has distributed a new **Academic Taxonomy for HEGIS Reporting**. The use of this taxonomy will allow for comparability in academic program evaluation. The statewide board should be involved in defining course level and program data to be maintained by the institution and submitted to the agency. Duplication of academic programs among similar institutions may be a waste of money and effort and may lead to an ineffective statewide education program, therefore, the agency should have the authority for determining what academic programs will be placed within what institutions. Given the nature of the program, finances, faculty, facilities, and institutional desire the statewide board is in a better position to make this decision than any other single agency. However, the board must be aware that unilateral action on its part will most certainly destroy institutional initiative, and probably the agency.

I have attempted to review the responsibilities and authorities of a statewide agency toward a management information system. The agency is faced with legal, political, and economical restrictions which are realities and which must be dealt with accordingly. The agency should be concerned with Finances, Budgeting and Financial Reporting, Students, Faculty and Staff, Facilities, and Curricula and should at all times be objective and professional in its communication with all institutions. Respect must be maintained for the community college and its place in the educational program as well as the medical college with its highly complex course structure, student activities, and very expensive program areas. The statewide coordinating agency can be a very helpful thrust for higher education in the state, the region, and the nation.

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GOVERNANCE, COORDINATION, AND COMMUNICATION IN THE STATE UNIVERSITY SYSTEM OF FLORIDA

G. Emerson Tully
State University System of Florida

Scope of Present-day Communication As an integral part of the operation of the State University System of Florida for the academic year 1970-71, an estimated 120 meetings attended by laymen, administrators, faculty, and students were held. Among the persons attending various meetings and conferences scheduled throughout the school year were members of the governing-coordinating board (Florida Board of Regents), the chancellor and his staff, university presidents, deans and department heads, faculty members and students appointed to **ad hoc** committees and task forces, representatives of business and industry, and members of the State Legislature. Many of these persons attended a number of meetings (the chancellor himself attended at least 75 meetings during the period September through May). Total attendance at these meetings exceeded 1,500. This estimate does not include persons within a single institution who met solely to consider issues and problems that confronted their institution, such as a university senate, a student government council, or special committees appointed by a university president.

Examples of these systemwide groups are: The governing-coordinating board (which meets monthly), subcommittees of the board (curriculum, regional medical education, building, etc.), Council of Presidents, Council of Academic Vice Presidents, Council for Student Affairs, Articulation between Community Colleges and Senior Universities, Community and Public Affairs, Administrative and Financial Affairs, Interinstitutional Committees on Student Health, Institutional Research, Personnel, Purchasing, Computer Technology, Admissions and Records, International Education, Continuing Education, Task Force on Law Enforcement and Training, and Teacher Education Advisory Council.

The above listing is not all inclusive. Approximately 30 such groups have been established, most of which meet each quarter. The average number of persons attending each council or committee is twelve. In addition, a number of **ad hoc** meetings are set up to look into special higher education problems that exist systemwide. The estimated total cost for these meetings (travel and per diem alone) approached $150,000 for the academic year.

Communication of this nature and scope was not designed and implemented in one fell swoop, but came about over a period of years. In 1950, a five-member Board of Control, with an executive secretary as its chief administrator and a central staff of five persons, constituted the governing-coordinating board for the three then existing state colleges and universities. Effective communication among the universities was not a concern of the board, and very little interinstitutional communication occurred. Twenty years later in 1970, a nine-member Board of Regents, with a chancellor as its chief executive officer and a central staff of 85 persons, governs and coordinates the operations of seven universities. (The Board of Control was renamed the Board of Regents by the 1963 Legislature, a change that became effective upon ratification of a constitutional amendment in the 1964 general election.) The planning responsibilities of the board are varied and complex; two additional upper division institutions are to open in 1972, raising the number of universities in the system to nine. The shift in the responsibilities of the board during this span of two decades from an emphasis on governance to an emphasis on coordinating and planning can be linked, directly or indirectly, to heightened communication.

Purpose of Paper The purpose of this paper is to advance a set of postulates concerning the relationship among governance, coordination and communications in public higher education. The postulates are not drawn from a hypothetical scene, but from the documented interplay among the changing strategies and priorities followed by the board in meeting its responsibilities in a time of rapid increase in the number of young people of college age in Florida.

The chronicalling of actual events as a basis for deriving the postulates contributed to the validity of the postulates. On the other hand, the educational setting was limited to Florida, a restriction that reduces the applicability of the postulates to governing-coordinating boards of other state systems. In the absence of reports in the literature of higher education that associate evolving avenues of communication to changes in the relative emphasis given to governance and coordination, the postulates set forth here are properly supported by the old adage that when there is no other evidence, then any evidence, despite its limitations, is "best evidence."

The paper will be developed along the following approach. First, a classification of boards of higher education will be given to provide a framework for describing the nature and purpose of the Florida board in relationship to the boards of other states. An attempt will then be made to trace the origin of communication strategies back to 1950 and even earlier equating the board's operations and goals to the type of communication which then existed within the State University System. Five postulates will be cited following a discussion of the events and occurrences that support each postulate.

The term "communication" as used in this paper refers to the exchange of facts, ideas, and opinion that takes place in group discussion, leading to further discussions and transmittal of information among people. This definition is somewhat narrower than the concept of communications that is held generally.

A Classification of Boards of Higher Education Boards of higher education institutions may be grouped into five broad classifications on the basis of whether or not the agency is a governing or coordinating board, or partly both, and whether or not the agency has a relationship with one institution or with a system of institutions. Although this classification is probably familiar to most institutional researchers, a grouping of boards on these dimensions is presented here to establish a perspective for viewing the type of board that serves the public universities in Florida.

ORGANIZATION PATTERNS IN FIFTY STATES FOR THE EXERCISE OF STATE RESPONSIBILITIES IN HIGHER EDUCATION[1]

Group I: States with institutional governing boards directly responsible to governor or general assembly: Delaware, Hawaii, Ohio, South Carolina, Washington, Wyoming (6 states).

Group II: States with a single governing-coordinating board: Alaska, Arizona, Florida, Georgia, Idaho, Iowa, Kansas, Mississippi, Montana, Nevada, North Dakota, Rhode Island, South Dakota (13 states).

Group III: States with two governing-coordinating boards or one such and one governing board for a single institution: Connecticut, Louisiana, Nebraska, Minnesota, New Hampshire, New Jersey, New York, Oregon, Tennessee, Vermont, West Virginia (11 states).

Group IV: States with complex organizations without a statewide coordinating board: Alabama, Colorado, Indiana, Maine, Maryland, Massachusetts, Michigan, Pennsylvania (8 states).

Group V: States with complex organizations with a statewide coordinating board: Arkansas, California, Illinois, Kentucky, Missouri, New Mexico, North Carolina, Oklahoma, Texas, Utah, Virginia, Wisconsin (12 states).

Martorana and Hollis observe that both the law creating the governing-coordinating boards and the practices of the boards placed a greater emphasis on governing as opposed to coordinating.[2] The observation of these authors was accurate and fitting in describing the function of Florida's governing-coordinating board prior to 1955.

Hungate also finds the governing-coordinating board to have a severe limitation – that a board of this nature has "neither the time nor the energy" required for effective governance and effective planning and coordination.[3] He writes that such a board has difficulty in sharing adequately in decisions relating to all institutions, that it tends to rely too much on the advice of the central staff, and that there is a likelihood that such a board will be preoccupied with matters of governance, shunting aside cooperative long range planning.

During the 1950's and 1960's, statewide coordinating boards were established in eleven states. (Only one state, Oklahoma, set up a statewide coordinating board prior to 1950.) There is no question but that the criticism of the governing-coordinating board voiced by students of institutional government in the 1950's and the early 1960's was a factor in shaping a trend toward the creation of statewide coordinating boards with no responsibility for governance. Despite the indictment of the governing-coordinating board as an ineffective agency for planning and not-with-standing the national trend toward statewide coordinating boards, the capacity of a governing-coordinating board to restructure its responsibilities in a way to give heightened attention to planning and coordination requires assessment. Public higher education in Florida was in recent years and is today an arena in which the reordering of board responsibilities can be viewed.

Governance and Coordination in Florida, 1905-1950 The Florida Constitution of 1885 vested control of all public education in the State Board of Education, composed of the governor, secretary of state, attorney-general, state treasurer, and state superintendent of public instruction. Twenty years later, in 1905, the State Legislature passed an act that abolished the State's miscellaneous array of colleges, seminaries, normal schools and institutions, replacing it with a three-institution system of higher public education: A state university, a college, and a normal school (Florida Statutes, 1905). The 1905 Legislature also created a board to govern the state institutions of higher education, but at the same time, specified that the "said Board of Control, except as herein provided, shall act in conjunction with, but at all times under and subject to the control and supervision of the State Board of Education" (Florida Statutes, 1905, Chapter 5384). Thus in 1905, dual control of public higher education in Florida was established by law.

The State Board of Education moved quickly to establish itself as the body to have the final say-so in fiscal matters, and during the next half century, subjected the Board of Control to its supervision. Although the details of management in higher education shifted somewhat from the State Board of Education to the Board of Control during the period 1905-1950, the upper agency never gave up its powers as the final determining body. In 1941, thirty-six years after its creation, the Board of Control was overruled by the State Board of Education in the selection of a university president, an action that left no doubt where final authority rested.

The four decades after 1905 marked a period when Florida experienced a well-managed system of **status quo** higher education. No political or policy differences between the State Board of Control and the State Board of Education were aired, except possibly for the brief clash over the appointment of a university president. No new institutions were planned, authorized or established. Institutional role and purpose remained rigidly fixed. For most of the forty-year period, one institution provided liberal arts and teacher training for white women, another offered programs in engineering, law, pharmacy, teacher education, liberal arts and agriculture for white men, and the third offered technical training, teacher education, and liberal arts for Negro men and women.

In 1947, a citizens' committee recommended to the Legislature that: 1) Coeducation be introduced in public higher education, 2) that another public higher education unit to be located in South Florida be planned, and 3) the ex-officio State Board of Education be replaced with a single board of education, and 4) that the university system be established, headed by a chancellor (Education and the Future of Florida, 1947). Culpepper and Tully in tracing the genesis of master planning in public higher education in Florida, view the report of the citizens' committee as marking the end of the unruffled atmosphere in public higher education in the state and the beginning of an era of change.[4]

From this review of the structure of public higher education in Florida during the years 1905-1950, the following postulate is derived:

> **Postulate One**: A governing board that emphasizes its governance responsibilities with an accompanying deemphasis on its planning and coordination responsibilities delays expansion and change within the institutions over which it has purview.

The Board of Control, 1950-1953 The Florida Board of Control in 1950 was a governing board in every sense of the word. Nearly all of the professional members of the small central staff were fiscal control persons. The board approved faculty appointments, set salaries below a specified level, approved new curricula, and purchased equipment. In short, the Board of Control managed the operations of the three universities in unilateral fashion. Except for introducing coeducation several years earlier and for providing for the enrollment growth that was beginning to occur in the state universities, planning was minimized.

The Board of Control in the early 1950's met once a month, similarly to the present-day Board of Regents. The three university presidents attended board meetings to be heard on matters which the presidents individually wished to present to the board. The presidents rarely, if ever, met as a council of presidents. Instead, each president named a representative to meet periodically with the representatives of the other two universities. When communication between the Board and the universities occurred, it revolved about fiscal affairs. Except for the meetings held by these three university representatives, there were no supporting avenues for communication among the universities.

Planning groups and committees established by statewide governing-coordinating boards generally publish their findings, conclusions, and recommendations. Often presented only in mimeographed form, these publications document both the planning process and the supportive communication process. The relatively few publications of this nature that appear in the late 1940's and early 1950's as revealed by a search of the archives of the Board of Regents is evidence of the lack of emphasis given to cooperative planning by the central staff and university representatives. There is no alternative but to conclude that the Board of Control in 1950 was, as its critics viewed it, a governing board, with no paramount interest in coordinating and planning.

An analysis of the way in which the Board functioned in the years immediately prior to and following 1950 led to this postulate:

> **Postulate Two**: A governing-coordinating board that extends only narrowly drawn and rigidly structured lines of communication to its institutions has limited capacity to bring about coordination and planning.

A Shift Toward Statewide Coordination In the early 1950's, Florida accelerated its population growth. During the decade 1950-1960, Florida nearly doubled its population, jumping from about 2,100,000 in 1950 to over 4,000,000 persons in 1960. This rapid population growth, with its implications for the need for additional state universities, was a factor in sensitizing the Board to its planning role.

In 1954, the Board of Control appointed a group of educators, consisting of A. J. Brumbaugh, John E. Ivey, Earl T. McGrath, and John Dale Russell to initiate "continuing studies" basic to the development of a system of higher education in Florida. A preliminary report of this advisory council **(Initial Report of the Council for the Study of Higher Education in Florida, 1955)**, gave the following recommendations: 1) The establishment of community colleges, 2) additional state colleges, 3) close liaison between the public and private sectors of higher education, 4) development of an overall structure for higher education, 5) a coordinated expansion of the roles of all institutions, public and private, and 6) the development of an overall long range plan for public higher education.

A group of laymen was also appointed by the Board of Control to serve as an advisory council to the board and the council. This group of laymen, together with the council and the board, recommended to the Legislature that a new university be established in the Tampa area.

The State Legislature, however, did not stop with authorizing the state university recommended by the board and its advisors, but authorized two additional institutions. Furthermore, the Legislature specified where the institutions would be located, one in Palm Beach County and one in Pensacola. A fourth new institution authorized by the Legislature in 1963, opened in Orlando in 1968 (Florida Technological University).

In 1965, the Legislature, in accord with recommendations of the Board of Regents, authorized the State Board of Education to open two more state universities, one in Jacksonville and one in Miami bringing the number of institutions in the State University System to nine (Florida Statutes, 1965). The Legislature, reflecting an acceptance of the role of planning as a proper function of the governing-coordinating board, directed that studies be conducted to determine the feasibility of establishing the two urban institutions.

A recent study of post-junior college education in Florida reported that over 85 per cent of the state's population lives within an hour or less of automobile travel time to one of the seven existing public universities or the two institutions scheduled to open in 1972.[5] The State University System, built without recourse to a long-range educational plan, appears to have its institutions located throughout the state in a way to be remarkedly accessible to the people.

There was a marked contrast to the approach followed by the 1955 Legislature in providing for new institutions, when it authorized three, although the Board had recommended only one; and the approach followed by the 1965 Legislature, which acted upon the recommendations of the board, leaving the final determination for opening the institutions to be guided by the findings of feasibility studies. It is safe to say that political considerations, not systemwide educational planning, lay behind the action of the Legislature in 1955 to a much greater degree than the actions of the Legislative body a decade later.

> **Postulate Three**: When a governing-coordinating board does not readily meet its responsibilities for planning for new institutions in

> the face of a rising need for new institutions, expansion in higher education will likely be shaped by forces other than the board.

Increased Autonomy for the Board Beginning in the mid-1950's the board began to apply sustained efforts to gain greater autonomy and to ease its subordinate relationship with the State Board of Education. One of the first steps taken by the board in this direction was to give additional responsibilities to its chief administrator, and to reflect this increased responsibility by changing the title of the chief administrator from secretary to executive director. Continuing its efforts to upgrade its central staff, the Board of Regents later successfully sponsored legislation that placed an amendment to the State Constitution creating a chancellorship on the general election ballot. The amendment was approved in 1965.

At the same time the board was intensifying its effort to win greater autonomy, it was preparing to exercise a wide range of decision-making by expanding its central staff. In 1955, the central staff, including secretaries and clerks, numbered nine persons. Except for the chief administrator of the board and one of his principal aides, the professional-level members of the staff were auditors or accountants.

In the next five years or so, the central staff doubled. A chief academic officer, a director of planning and evaluation (whose principal assignment was to coordinate budget preparation among the universities) and a research specialist were added to the staff. Detailed supervision at the level of the central staff of the fiscal affairs of the universities began to give way to the formulation of broad policies with institutional management being delegated to the campuses. But full autonomy still eluded the board, slowing the process of delegation of functions to the universities. As late as 1963, the Legislature enacted a statute requiring that the budget commission (composed of seven cabinet members) approve faculty salaries over $15,000.

Responding to the board's press for greater freedom in its policy determination, the 1967 Legislature amended previous statutes to eliminate the supervision of the State Board of Education in establishing policies, regulations, and powers of the Board of Regents. For the first time, a section of the law was written to set forth the intent of the Legislature toward broad autonomy for the board:

> It is hereby declared to be the intent of the legislature that the board of regents of Florida be granted the necessary powers to govern, regulate, coordinate, and oversee the institutions and agencies in the state university system. It is the further intent of the legislature that the board shall be primarily a policy-making board, establishing the policies of the university system by rules and regulations adopted by it, and shall delegate sufficient authority both to its staff and to the heads of the institutions and agencies so that they shall be fully responsible for the management of the several institutions and agencies. However, the board of regents shall select the heads and programs of the institutions and agencies, subject to the provisions of existing law, review and approve all budgets in the state university system, review such actions and decisions as may be appealed to it, and through its staff conduct studies of the institutions and agencies as related to the present and future needs of higher education in Florida. (Florida Statutes, Ch. 240, 1967)

Areas in which the board now exercised greater autonomy were budget preparation and review, setting admission standards, and planning for new institutions. The same Legislature repealed a 1963 statute requiring budget commission approval of faculty salaries over $15,000 and removed the provision that the State Board of Education concur in the selection of the chancellor and other administrators in the State University System.

The problem of dual control in public higher education that had existed in Florida for decades has been largely resolved by the recent legislation expanding the powers of the Board of Regents. The State Constitution as revised in 1968 still provides for a State Board of Education that "shall be a body corporate and have such supervision of the system of public education as provided by law" (Constitution of the State of Florida as amended in 1968). Existing law, however, provides that the responsibilities of governance and planning in public higher education be in the hands of the Board of Regents thus giving the State Board of Education a role of general and broad supervision instead of one of detailed management and close supervision that it had in years passed.

As the central staff increased, the board set up more and more channels of communication with the universities. Problems and issues concerning fee payments, new curricula offerings, admissions standards, and the calendar were now referred to interinstitutional councils and committees, which recommended courses of action to be followed by the board. In the process, the universities came more into the stream of decision-making, especially in matters relating to their own management.

> **Postulate Four:** A governing-coordinating board must itself attain a high degree of autonomy before it can effectively increase the autonomy of its institutions by delegating institutional management responsibilities to the institutions.

Long-Range Educational Planning In the immediate years following the action of the 1955 Legislature in authorizing the three new state universities, the Board of Regents had neither the central staff planning resources nor communication lines with its institutions to facilitate the utilization of university resources in planning for the newly authorized institutions. Planning was accomplished by outside consultants named by the board to advise it concerning the educational purpose and function of the new institutions, projected opening enrollments, educational innovations that should be implemented, capital outlay needs, and campus planning.

Perhaps the strategy of bringing in out-of-state consultants, who were certainly well-known and highly respected educators on the national scene, to guide the planning process was well chosen. The existing state universities had not participated in the decisions to establish the new institutions, and there was some opposition in the existing institutions to the strategy of providing for the expanding college-age population by building new institutions instead of expanding the universities already in operation.

During the early 1960's, as the three new institutions came into operation, the number of councils and interinstitutional committees steadily increased. A casual observer might be tempted to conclude that the Board of Regents had deepened its capacity to plan for new institutions too late; that the critical need for the planning had passed. This would have been a judgment partially true, partially erroneous. Certainly the board developed its capacity to plan using its own in-house resources too late for three institutions. On the other hand, the need for blending the operation of these newer institutions with that of the older ones was intensified. Then too, as the number of state universities increased from three to seven in the short span of eight years, the urgency for a long-range comprehensive plan for the state institutions, with provisions for controlled expansion based on defined institutional role and scope became increasingly felt. The capacity for planning did not come too late, but had it come earlier, state resources used to support public higher education would, probably, have been used more optimumly.

Currently, the chancellor's staff has three major divisions, each headed by a vice chancellor. These divisions are: academic affairs, administration, and medical and health sciences. Professional members of the staff serve as chairman of one or more of the institutional councils and committees. The growth of the central staff to its present dimensions and organizational structure reveals that the board is developing the capacity to support fully the planning and coordination responsibilities once shunted aside by overriding responsibilities of governance.

A master plan for the public universities, drafted initially in the early 1960's was expanded to become a document titled, "Comprehensive Planning for the Development of the University System of Florida" (CODE). Phase I of the planning document outlines in broad terms educational goals, sets forth the role of individual institutions, gives ten-year enrollment projections, cites criteria for adding new programs, provides for establishing new institutions, projects operating needs, and defines space and capital outlay requirements prerequisite to campus and physical planning. Subsequent documents will treat in greater detail the issues included in the Phase I publication.

The planning document is both a guide for future planning and a product of planning that occurred in the past. The development of the document gained impetus as communication grew in scope and depth. By 1967, the board had won its autonomy from the State Board of Education in large measure, and also, was receiving the benefit of the workings of the interinstitutional councils and committees. The time was now ripe for quick action on the final development and adoption of the long-range plan by the board. The planning document, written in 1968 by the central staff in close cooperation with the university representatives, was approved by the Council of Presidents and Board of Regents in 1969, and went to the printer in 1970.

Postulate Five: An increase in avenues of communication between a governing board and its institutions, and among the institutions themselves, heightens the capacity of the board to meet its coordinating and planning responsibilities.

Management Information and Planning Programming Budgeting Systems The communication process, being given structure and design by interinstitutional committees and councils, is strengthened by developments in modern day technology. In the state universities, an information system is being planned to provide the universities with the capacity to report a wide range of information on a systematic and continuing basis. When this system becomes operational two or three years hence, information relating to the day-to-day operations of the universities will be available to the central staff in a more complete array than was possible under the traditional method filling out reports and questionnaires. Equally important as the aspect of coverage is that of easy and immediate access to information. When information is appropriately assembled and made readily accessible it immeasurably undergirds decision-making.

The information system will not, of course, replace the presently-functioning councils and committees. Instead, the information system will make these communication groups even more effective by providing them with comparable data from the institutions for review and evaluation as issues and problems are being explored. No longer will there be a need for the interinstitutional groups to expend time and effort to collect data which are needed to explore a problem in detail. Information retrieval made possible by the management information system will have the end result of enabling interinstitutional groups to deal with a wider range of problems in greater depth and in less time than before.

Another development that extends the capacity of the board to marshall its resources and to assess the progress being made toward the realization of established goals is the implementation of a planning programming budgeting system (PPBS). The advent of PPBS is taking place at the same time that the management information system is being made operational.

PPBS, supported by a management information system, offers the promise of taking the meandering out of educational planning. Financial support needed to attain objectives can be projected, and the process of goal attainment can be planned systematically. Management capacity is vastly enhanced by the organizational and fiscal rationality reflected in PPBS. A governing-coordinating board, at one time largely immobilized by the range of its complex responsibilities, becomes equipped with PPBS to allocate its time equitably between its governing, planning, and coordinating obligations.

State Governmental Reorganization The successful efforts of the Board of Regents during the late 1960's to win autonomy, in the view of some observers, received a setback as the decade came to a close. The 1969 Legislature approved a comprehensive reorganization of state government, which placed the State University System (renamed the Division of Universities) under a Commissioner of Education, along with the three other divisions: the Division of Community Colleges, of Vocational-Technical Training, and Kindergarten through Grade Twelve. The Division of Universities has as its director the Board of Regents.

The Board of Regents is seeking to keep its autonomy from possible erosion by governmental reorganization by asking the 1970 Legislature to exclude it from the Legislation of 1969 that created the reorganization. Although governmental reorganization is too recent to permit a full appraisal of its impact on the Board of Regents, there are signs that the governing-coordinating relationships of the board with the universities are not seriously impaired. There is, in the eyes of the board and the central staff, more "red tape" than before. Even more unfortunately, communication between the board staff and top administrators in other divisions of the Department of Education has become tenuous. There have also been some administrative restrictions placed on the decisions of the board, but these restrictions may have little educational significance. For example, the board is now required to consider faculty and staff as state employees subject to the same privileges and constraints as other state workers. No longer may faculty and staff buy season football tickets at half-price because this is a benefit not available to state employees generally. Also, faculty and staff cannot register for one course each term free of fee payment and with time off to attend the course as was the policy in the past.

There are some signs that the upward spiraling of public higher education cost will mean that the Legislature will propose other constraints on the State University System that will be of great educational import. For example, the Legislature has clearly indicated that it will fund lower level instruction in the public universities on the same basis as in the community junior colleges. Such a policy is intended to give support to the community colleges, and at the same time, indicate to the state universities that enrollment growth should take place at the upper division level. Already in effect is a pack between the State University System and the community colleges that all students receiving the Associate in Arts degree from a community college and who have a "C" average, will be admitted to junior standing.

Faced with having to accommodate ever increasing numbers of junior college transfer students (in a short time, at least 50 per cent of the students enrolled in the upper division of the public universities will have a junior college origin) the Council of Presidents, upon the recommendation of the chancellor, set a ceiling on first-time-in-college enrollment, an action that will have the effect of stabilizing lower level enrollment, as only a relatively few transfer students are admitted as freshmen or sophomores in the state universities.

There is still another possible area of legislative restraint. In all likelihood, growth at the graduate level will be pegged to enrollment growth at the upper level. Although upper level growth will undoubtedly occur, thereby insuring graduating level growth, the magnitude of increased enrollments in graduate study will not be as large as it has been in the past. The Council of Academic Vice Presidents has proposed criteria for inaugurating new graduate programs which will enable the chancellor to implement legislative restraints according to a cooperative agreement reached by university representatives.[6] Without the existing communication network that has been built up in recent years, there would have been no adequate channels for effecting a proposal based on discussion and agreement among university representatives.

Legislative restraints on the board may not mean that the board is losing, or has lost much of its recently acquired autonomy. The restraints are being looked upon in some quarters as a proper attempt of the Legislature to pace continued expansion in public higher education to available tax support. The ways in which these restraints are allotted throughout the State University System remain in the hands of the board and the chancellor.

The author wishes to express his appreciation to David C. McOuat for assisting in the preparation of this paper.

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COMMUNICATION BETWEEN INDIVIDUAL INSTITUTIONS AND STATE AGENCIES FROM THE STANDPOINT OF THE PRIVATE INSTITUTION

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Dr. Ben Lawrence, in a most competent and scholarly manner, has defined and classified the kinds of information and the nature of decisions which state agencies require for the intelligent planning of higher education on a state-wide basis. He has explained, also, how the responsibilities for the collection of this information and for the making of determinations should be assigned as between the state agency and the individual institution. At the same time, either deliberately or otherwise, he has narrowed our assigned topic somewhat in that he has limited his discussion of communication between institutions and the state to that communication which is involved in a state-wide planning process. I heartily concur in this limitation of the subject. Although there are other facets of communication involved, planning, after all, is the basic problem in communications between state bodies and individual institutions which coexist in the state.

The brief remarks which I shall make will attempt to emphasize, first, the transcending importance and even the urgent necessity of intelligent planning for higher education on a state-wide basis (I would also say that there is an equally urgent need for more intelligent planning on a National basis); and, second, the essentialness of the inclusion of the private college and university in any process or mechanism which has state-wide planning for higher education as its objective. In my judgment, there can be no intelligent planning for higher education unless all institutions within the state are included in the process.

It is probably an understatement to say that state-wide planning for higher education is an extremely difficult process. Individual institutions simply do not like to be "planned at." Historically, colleges and universities have vigorously resisted efforts on the part of the state or the Federal Government to coordinate and allocate priorities and programs for the institutions. It is a fact that the great strengths of the American institution of higher education has been its autonomy, its diversity, and its independence – and this is true whether the institution is publicly or privately controlled. I would presume that this, more than any other reason, has lead to the somewhat disorganized and inefficient situation in which higher education finds itself today. The present situation with respect to higher education is quite amazing and sometimes bewildering. There has been virtually no planning at the Federal level for higher education; totally inadequate planning on the state level; and, in many individual institutions, little or no planning, or – at the best – ineffective planning.

We know that there are more than 2,000 institutions of higher education in the Nation of diverse types and with varying standards – all fiercely protecting their independence. Within each state there are coexisting systems of higher education, frequently more than one in a given territory. For example, in my own State of Louisiana, there are several systems of higher education. There is a university system with branch campuses, operating under a board of supervisors, and there is a state college system, operating under an elected State Board of Education. There are junior colleges, trade schools, and some subsystems involving the predominently black colleges in the State. Finally, there are the private institutions which operate independently of each other and of the State and which enroll about 20 per cent of the students.

As I view the present financial status of higher education in this Nation, both state-controlled and privately controlled, it is painfully apparent to me that the economic needs of higher education have already far outstripped available resources and will continue to do so, perhaps at a greater rate in the near term. This leads me to the conclusion that the old system of "business as usual" on the part of the Federal Government and the states, as well as the individual institutions, is no longer valid. We must use our already inadequate resources more effectively and more wisely if higher education of quality is to continue. State-wide planning of all higher education within the confines of the state is absolutely essential.

For the point of view of the private institution meaningful interaction with state agencies has been understandably slow to evolve. Private institutions have been reluctant to share information with the state because of what might be termed the fierce defense of the independent status of the private school, and the intense desire to stay clear of any form of political control. On the other hand, the state agencies have respected this sensitivity on the part of the private institutions and have been reluctant to impose obligations for the sharing of information and planning on them.

As I stated previously, the realization – which has been slow in coming – of the financial crisis facing higher education in this country is forcing more and more institutions to the conclusion that intelligent planning both on an institutional basis and on a state-wide basis is essential. There is another reason for what seems to be an increasing willingness on the part of private and state institutions to share information leading to planning programs. I refer to the narrowing of the differences as between state and private institutions in terms of respective sources of support. Institutions are becoming more alike, whether they are state-controlled or privately controlled, in terms of the sources of their revenue budgets. As we all know, Federal funds have become more and more an integral part of the budget structure of both state and private institutions. Moreover, the private institution is seeking in a variety of ways to obtain state financial assistance. On their part, state institutions increasingly are seeking funds from private philanthropy – once considered the exclusive domain of the private institution. This convergence in the nature of support between the state and the publicly controlled institution has advanced the view that all institutions within the confines of the state, in some way have to plan together for the best possible use of available scarce resources.

A recently published study, prepared by the Academy for Educational Development for the United States Department of HEW, entitled "State Planning for Higher Education," sheds some light on state agency attempts to engage the private institution of higher education in its overall planning processes. The study finds that there are over 300 individual state agencies scattered throughout the 50 states with varying degrees of responsibility for communicating with institutions of higher education within its borders. Either by statute or by constitution, agencies have been established in 40 states, whose principal objective is to coordinate overall planning for higher education. In the other 10 state's there are advisory or voluntary arrangements which are more or less effective. It is interesting to note, however, that in only 14 states is the official planning agency charged with an appreciable degree of responsibility for including the private institution in overall planning for higher education. In 15 additional states there is some degree of recognition of the private institution in state-wide planning intentions but to a limited extent.

A word or two about my own State of Louisiana – which has lagged far behind in the question of state-wide planning. Although there were a number of abortive attempts in earlier years to produce a master plan for higher education, and although there have been statutes from time to time calling for coordinating bodies which have never really functioned, and although there have been statutes from time to time calling for coordinating bodies which have never really functioned, and although there have been expensive surveys by management consulting firms and others that were never implemented, it was not until 1968 that a real, live coordinating body for higher education was created. This body, known as the Coordinating Council for Higher Education, was established and became operative in 1969. The functions of this Council, in summary, are as follows: 1) Preparation of a coordinated master plan, after analyzing present and future needs and goals of public institutions, 2) approval of all proposed new degree programs in state institutions, 3) a basic review of all existing programs of instructions, research, extension, and public service, 4) examination of the annual operating budgets of public institutions of higher education, and 5) recommendation to the Executive Branch in the Legislature of complete construction and improvement budgets in order of priority on the location and creation of new institutions.

The Coordinating Council, thus, depends largely upon the voluntary participation of state-supported and private institutions, having executive authority over establishment of new degree programs and the construction and location of new institutions.

I am happy to be able to say that from the very outset the private institutions of Louisiana have been encouraged to participate in the deliberations and early plans of the Coordinating Council, and all have indicated their willingness to cooperate fully in the master planning program for the State of Louisiana. This is a timely and important development from the point of view of the private institutions as well as for the State as a whole. The absence of long-range plans on the part of State institutions has resulted in some traumatic experiences in the private institutions. For example, dental education in Louisiana, up to several years ago, traditionally had been the function of private institutions. One of these private institutions, which had operated a dental school for about 40 years, was in the process of planning a completely new school on a totally new site; had already obtained a Federal appropriation for construction purposes; and had acquired expensive land on which to build the facility. It was suddenly and apparently without forewarning confronted with the knowledge that the State intended for the first time in history to go into the dental school business. The situation created somewhat of a dilemma for the private institution, which I think was subsequently solved with mutual satisfaction when the State assumed some or all of the commitments of the private institution and proceeded to open its new dental school. I wish to emphasize that there was no maliciousness on the part of the State or any intent to harm a private institution. This is merely an example of what inevitably happens when the left hand of the State is ignorant of what the right hand is up to.

My own institution, a private, independent university, is frequently handicapped in planning for its future because there is no mechanism – at least not yet – for permitting us to know what plans the State institutions are making. Here again I sense no unwillingness on the part of State institutions to divulge information or any deep-seated plot to keep plans secret. There simply has been no formal mechanism for making their plans available to us and our plans available to them.

In view of the critical financial situation in this State on the part of both the private and publicly supported institutions, it is imperative that resources be allocated as efficiently and intelligently as possible in order to serve the needs of the State and its individual institutions. Statewide planning and coordination of higher education including all components and all systems of higher education in the State, in my judgment, is one of the essential ingredients in any attempt to solve the financial plight of higher education.

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COMMUNICATION BETWEEN INDIVIDUAL INSTITUTIONS AND STATE AGENCIES

Vernon E. Wilson
University of Missouri

If this title could be changed perhaps it should read "The New System of Governance for Higher Education in the Public Sphere." While the system itself isn't new, its active use in higher education would be. In this instance I use governance in the positive, not the negative, sense. For our discussion may I suggest that it be defined as "the coordination of multiple sources of effort or energy in the pursuit of a described and agreed upon goal." The proposed method of governance will be the skilled and judicious use of the flow of information through the system.

Governance in the democratic sense implies participation. Participation in turn, I would submit, needs precise elaboration and clear definition, so that each communicant understands his role and has realistic expectations of the information he will receive. The range goes from being purposefully uninformed when being "informed" to the extreme of the "Town Hall" approach which involves everyone in the discussion and decision making.

Intermediate levels might be described as: 1) All members of the group being informed and invited to comment, b) direct permission sought for a specific proposal (referendum), c) delegated decision making (legislative or executive). Policy development is best handled at the Town Hall end of the spectrum while detailed administrative operations fit best at the opposite end. Using this mnemonic I strongly support Dr. Lawrence's plea for decentralized decision making.

Let's now turn our attention to the matter of communication between individual institutions and their related state agencies. It may be appropriate to review briefly the nature of and related challenges to the institutions themselves.

Certainly public colleges and universities have many audiences with whom they must communicate. State agencies are but one of them. If the public institutions are to survive, communication with state agencies cannot thwart, or dominate, the institution's natural pattern of communication with all its audiences.

The foundation upon which any communication system works is mutual trust or credibility. Credibility in turn has a high correlation with predictability and understanding. Both are of far greater importance than agreement per se.

Recognizing this aspect of a communication system, we should be mindful, also, that certain unique communication challenges are inherent in the nature of public institutions. The state-supported university has a number of audiences which are similar to those of private colleges and universities. But they also have some audiences to which private schools are not subject.

These special and very important audiences tend to be more numerically oriented. They include governing boards which are politically appointed. They include, also, the state legislature, which is the primary source of support; and, they include essentially all of the public whose tax dollars go into that support.

Like private institutions, public universities must communicate with students, faculty, alumni, parents, private donors, and federal granting agencies. Even these audiences have sub-groups. Communication with graduate students and those in the professional programs, for example, may take place in quite a different context from that directed to young undergraduates.

Also, like private institutions, but in a much more highly developed form, public colleges and universities have increasingly detailed public fiscal accountability. In many instances all of their fiscal operations, including personnel payrolls, are a matter of open public record. They must be able to explain explicitly where the money goes. They must be able to convince legislative appropriation committees that specific amounts and kind of funding are necessary. They must also be able to sell the public on the benefits derived from tax dollars used for these purposes.

Understanding this set of demands, one other premise underlies the relationship as I see it between public institutions and state agencies. This is the assumption, based on both observation and experience, that the chances of effective communication are best when all parties involved stand to gain something from the interchange.

Perhaps in this discussion I should explain that I am speaking of state agencies generally – of the Bureau of the Budget, Departments of Education, Welfare, Health and the like, as well as Councils on Higher Education. Similarly, universities are simply one kind of state institution but here I will be using the term "university" to stand for all institutions.

Certainly we are all cognizant that the University as an organization is under sharp attack in many quarters. Full participatory decision-making is being demanded on all sides. If we are to adequately respond to these challenges, the roles of institutions and agencies must be clearly enunciated. A crisp and mutually acceptable allotment of responsibilities is essential. These respective assignments must be clearly understood, energetically pursued and consistently implemented.

The structure of the University, and the larger structure of the community, or state, requires maximum participation in policy development by all who will be affected by that policy. At the same time the system must permit rapid action and response.

There are now available, yet often unused, methods by which opinion and feedback can be collected both within the University and from the broader community. Substantial study needs to be done of the way in which these communication mechanisms can be built into our operating structure that opinions and suggestions of those likely to be affected by decisions can be heard and recorded and made a part of the planning process.

If we return then to my earlier assumption, that communications are likely to be most effective when all involved can expect to gain from the interchange, then this suggests that state agencies must provide something which institutions perceive as being of value. In matters affecting the university, state agencies must provide the opportunity for universities to participate in helping to set appropriate agency goals and priorities. This concept suggests further that agencies should devote resources – people and media – to communication with the educational institutions.

In turn, universities must realize that all institutions exist by the grace of society. Each must be able to explain simply and clearly what it does for society. If public institutions take their social mandate seriously, they must devote resources, again people and funds, to communicating with all of their partners, including the state agencies.

Universities and colleges must, it seems to me, realize that state agencies require public recognition if they are to continue to survive. Further, institutions must be willing to assist in giving agencies such credit.

In order to accomplish these ends, public institutions must understand their own activities. This is particularly crucial to them because of their accountability to the public, to whom they must look for the bulk of their support. It implies the need for an unequivocal understanding of purposes and goals, of operational procedures, and of fiscal matters.

As an illustration may I suggest the generous use of the item analysis approach to the study of expenditures. We need to eliminate a practice which pretends there are cost-free byproducts to the educational process. The social and community value of health services provided in University Medical Centers is a case in point, but similar contributions are made to the state in schools of engineering, social work, veterinary clinics, community planning, and the like.

One illustration of an approach to such a communication challenges lies in the effective use of data banks initiated and operated by the institutions but making their data freely available in a useable form to the agencies. Operational procedures should provide for the collection of the maximum amount of information, useful both to the institution and to the agency, with a minimum of duplication of effort in gathering that data. To put it another way, systems should be designed so as to expedite analytical studies, as well as to organize operations.

For example, by appropriately computerizing the process of student registration, it is possible to automatically produce data showing classroom use, class size, faculty teaching effort, and the like.

With Dr. Lawrence, I would urge that only information necessary for institutional operations be included in the construction of initial data banks. Finally, however, there certainly will be valid reasons for assembling additional information relating to: a) Students, b) faculty, c) teaching and research, d) equipment and facilities, and e) basic research for academic endeavors.

I will not dwell further on the basic potential for data banks, but to me they appear to offer the only hope for developing what might be called the "administration of creativity." Faculty, as you are well aware, are highly sensitive to matters of academic freedom and to the opportunity, or lack of it, for full expression of their creative powers. The assemblage, and free display, of basic information encourages the development of mutually acceptable goals which can be pursued in a coordinated fashion. The same facts are there for all to use and thus their credibility is enhanced. This would seem to eliminate at least some of the possibility of one group reacting from one set of supposed "facts" while another group operates on the basis of different information gathered from different sources.

Once factual information can be collected and placed in a data bank, and that bank tapped whenever and wherever that information can be useful for decision making purposes, the chances of all groups on a campus, or in a state, working together seems to me to be immeasurably increased.

This process implies question asking and judicious study and display of the answers. The questions must be minimal in number, important in scope, coherent in structure, and answerable. If this approach is to be effective, the answers must be accurate, specific, and relevant to the questions being raised. To state it a different way, a few questions well asked and answered can do more to initiate and to improve mutual trust than the all too often mysterious "shotgun data-gathering approach" which continues to exist.

Apart from the establishment of data banks, what else can be done to facilitate communication between a stage agency and public institutions? I would suggest to you one approach which has appeared to function fairly successfully in a somewhat different milieu. Although the groups differ, the needs are similar and the concept seems to me to have application to the general educational setting.

The structural model of communications that I will be describing has been developed and is still operative in the Missouri Regional Medical Program. In that program a two-way flow of communication is encouraged through a system of councils.

At the top of this structural arrangement is an advisory council to the agency. This council, which serves as the governing body, is selected in a publicly responsive process – appointment by the governor. This is the group that makes recommendations, in this case, to the federal government.

If we were to adapt this system to the educational situation, and follow Dr. Lawrence's set of objectives, then this group would make recommendations on institutional mission, scope and quantities. This Council has a staff group who assists with the planning and evaluation procedures and whose findings are then reported to the Council for their use in decision-making.

Sub-ordinate to this Council are two other advisory groups. The first of these, called the Program Review Panel, is an ex-officio body, composed of the deans of medical and osteopathic schools in the state. For an educational agency, their counterparts would be the presidents of colleges and universities. This group provides expert review of proposals for programs. Thus, it enlists the support – and captures the expertise – of the groups who ultimately must do the work which the agency recommends.

The second panel, a liaison group, is composed of representatives of all statewide groups interested in health care. This includes representatives of the volunteer health organizations, like the heart and cancer societies, as well as representatives from the health professional groups. Also on the liaison panel are consumers, members of the public, who represent those people likely to be affected by the programs which the Council ultimately accepts or rejects. For an educational agency, this panel undoubtedly would involve, also, representatives of student and faculty groups, and various educational associations, as well as members of the tax-paying public.

This liaison panel receives program proposals at the same time as the Program Review Panel and forwards its comments and suggestions, if any, to the Advisory Council. The arrangement thus provides for direct communication with members of special interest groups.

A similar system of councils might, it seems to me, help to facilitate communication between public institutions, a state educational agency, and the various publics. When vacuums exist, problems so often rush in to fill the void. When we fail to communicate, misunderstandings, suspicion, and lack of faith can develop. What we need, I expect, are means of making the communication process easier.

A third suggestion is presented as an hypothesis. We need to vividly demonstrate that educated minds are an economic asset for a state, and that, like other assets, they have the characteristics of quality, obsolesence and cost of maintenance. A recent article in the Wall Street Journal suggested this approach and the idea seems worthy of further attention and thought.

And, finally, we need to concentrate more intensively on our shared needs and less intensively on the differences which tend to divide us. It is time to renew our resolve to cooperate to the utmost with coordinating agencies, with sister institutions and with direct publics.

Institutions and agencies alike are now under intense scrutiny. They are being challenged to prove themselves responsive to the society which supports them. This may call for imaginative new methods of communication to meet these new challenges, both in existence and in development. Past approaches may no longer have validity. As the visionary science-fiction writers are warning us, "The future is not what it used to be."

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COMMUNICATING WITH OTHER INSTITUTIONS

AN EVALUATION OF THE OKLAHOMA CONSORTIUM ON RESEARCH DEVELOPMENT

Larry K. Hayes
Oklahoma State Regents for Higher Education

The Consortium was established in the summer of 1967 to provide the machinery necessary to encourage Oklahoma institutions of higher education to band together voluntarily for the purpose of developing their intrainstitutional and interinstitutional research capabilities, and to enable them to improve the quality of instruction in Oklahoma. While the primary emphasis of the Consortium is in applied research, research is broadly defined to include institutional research and program development, evaluation, dissemination and utilization activities.

The Oklahoma State Regents for Higher Education has the responsibility, under the Oklahoma Constitution, for coordination and leadership at the state level with emphasis in the areas of functions and programs of study. The State Regents as the contracting and coordinating agency for the Oklahoma Consortium on Research Development was awarded a grant of approximately $214,000 by the U.S. Commissioner of Education over a three-year period to accomplish the above purposes.

The State Regents assigned a person half-time to the Consortium as the project supervisor. The University of Oklahoma and Oklahoma State University each assigned a person part-time to the Consortium as co-directors during the first two years, and then as coordinating consultants for the third year of operation.

Membership was open to all institutions of higher education in Oklahoma, with a representative from each of the thirty-three member institutions serving as a delegate to the Coordinating Council. The Council, operating within the broad policy of the Oklahoma State Regents for Higher Education, was the policy-formulating body for the Consortium. A seven-member Steering Committee was elected annually and in turn elected from its membership a chairman to preside over meetings of the Coordinating Council and the Steering Committee.

The Consortium staff, with consultation from Dr. Paul L. Dressel of Michigan State University, designed and conducted the evaluation of the Oklahoma Consortium on Research Development in terms of the stated objectives of the Consortium.

Methodology

The Oklahoma Consortium on Research Development objectives were developed through the joint efforts of the Coordinating Council, the Steering Committee and the staff, with consultation from Dr. Dressel and approved by the Coordinating Council during the first year of operation. Evaluation instruments were developed as follows: a Research Activity Status Survey designed to determine on a pre- and post- basis the degree to which the research organization and activity at member institutions had changed from 1966-67 (prior to the advent of the Oklahoma Consortium on Research Development) and 1969-70 (the end of federal support for the Consortium); an opinionnaire designed to determine on a pre- and post- basis the degree to which student, faculty, and administrative perceptions as to the effect of faculty research activity on instruction had changed from 1967-68 to 1969-70 and to make certain comparisons between groups; and an opinionnaire, statements taken from Oklahoma Consortium on Research Development objectives modified only to fit a questionnaire format, designed to determine on a pre- and post- basis the degree to which college presidents and Coordinating Council members perceptions as to "what is" and "what should be" the situation at their institution, relative to research activity, had changed from 1967-68 to 1969-70 and to make certain other comparisons.[1] Approval was obtained from the U.S. Office of Education for the use of each of these instruments.

Procedures were developed to make it mandatory for the director of each Consortium activity – conference, seminar, pilot research project, etc. – to submit a final report for evaluation purposes. Directors were also asked to indicate what they considered as the spin-off benefits of each Consortium activity for which they were responsible. Information concerning the number of students and type of student involvement was obtained from these reports. Interview sessions were scheduled on several campuses to obtain the opinions of students concerning their involvement.

A series of visits were scheduled to enable Dr. Dressel, the project evaluator, to examine Oklahoma Consortium on Research Development files; to observe various kinds of activities in operation; and to visit informally with numerous individuals and groups associated with the Consortium. Dr. Dressel agreed to provide a brief subjective evaluation paper at the end of the federal funding period based upon his visits and his review of project records and reports.

Evaluation plans were presented to the Coordinating Council in the fall of 1968. The plan was explained in detail, written procedures distributed, and questions answered. The Coordinating Council members agreed to work with their research coordinators in administering the instruments on a pre- and post- basis. The **Research Activity Status Survey** instrument was filled out by the research coordinator from institution records. The **Research Activity of Institutions: What Is – What Should Be** instrument was answered by the college president and the Coordinating Council member. The **Effect of Faculty Research Activity on Instructions** instrument was administered to a stratified random sample of 10,000 students, 500 faculty, and 100 administrators.

Instruments were administered during the peak period in the same week at each institution, the pre-test in the fall of

1968 and the post-test in the spring of 1970. The data collected were analyzed as follows:

The **Research Activity Status Survey** – frequency and percentages for each question by institution for both the pre- and post- data and a comparison between pre- and post- data.

The **Research Activity of Institutions: What Is – What Should Be** – frequency, percentages, mean and standard deviation for each question by classification and type of institution, and comparisons utilizing the U test, Wilcoxson, and Chi square statistics.

The **Effect of Faculty Research Activity on Instruction** – frequency, percentages, mean and standard deviation for each question and comparisons utilizing the U test, Wilcoxson, and Chi square statistics.

Basic Oklahoma Consortium on Research Development Activities

Pilot Research Grants were made to 134 faculty members to encourage personnel from member institutions to develop proposals and undertake research projects and thus gain experience in research and related activities.

Development Seminar Grants were made to 37 Consortium institutions to enable them to identify problems and to get faculty together to determine how to work cooperatively to solve the problems identified.

Research Laboratory Experience Grants were made to 13 faculty to enable them to gain experience in a university research laboratory situation.

Information and Consultation Service was provided for any institution interested in developing a proposal, revising a program, obtaining research information on materials (ERIC, etc.), training personnel, and/or just keeping up with state research activities.

Media Task Force was organized to determine how institutions might work together and with industry via a statewide communications system, beginning with television.

Organizational Seminars were conducted to assist those institutions interested in establishing ongoing institutional and faculty research offices and working with other institutions in the development of compatible information systems.

Major Findings

The project evaluation was focused on each of five general Oklahoma Consortium on Research Development objectives.

Objective I: to develop a nucleus of competent research faculty at member institutions.

In 1966-67, the number of program development and/or training proposals developed and submitted for outside funding was almost nil. In 1969-70 109 proposals were developed of which 72 were funded and 26 others are still pending.

In 1966-67, the number of faculty attending professional meetings was 51 and no faculty member actively participated in such a meeting. In 1969-70, 284 faculty members attended a professional meeting and 122 took an active part in a professional meeting.

In 1966-67, only eight institutions had three or more faculty involved in research. In 1969-70, 28 institutions had a nucleus of research faculty (junior colleges – three or more, senior colleges – six or more).

Several recipients of Consortium Pilot Research Grants, of approximately $200 each, used the pilot research study results to develop larger proposals for federal funding: Southwestern State College – NSF, $16,000; Central State College – NIH, $35,000; Oklahoma Military Academy – NSF, $20,000. and East Central State College – NSF, $32,000.

Following the Consortium Research Workshops in 1967-68, faculty members from Oklahoma institutions submitted more Small Grant ($10,000) proposals to the Regional Research Office, had more proposals funded, and had a higher percent of their proposals funded than any other state in Region VII.

Responses from 8,220 students, 336 faculty, and 85 administrators indicated that all three groups perceived the **effect of research activity on instruction** in a positive fashion.

In general, students were most positive and faculty were least positive toward such statements as: **Research results** in the introduction of the process of systematic inquiry into a course.

Faculty indicated that: **Research leaves a professor too little time for classroom preparation** and **research makes a professor unavailable for personal conferences regarding matters pertaining to a course**. The students differed significantly from faculty.

Administrators were in the middle on every statement, but differed more with students than with the faculty.

Relative to Oklahoma Consortium on Research Development Objective I, presidents and Coordinating Council members stated that a nucleus of competent research faculty did not exist at their institution, but that it should exist.

Objective II: to cause institutions to establish institutional and faculty research operations.

In 1966-67, there were eight institutional research offices and three faculty research offices in the state. In 1969-70, that number had increased to 19 institutional and 17 faculty research offices.

Since 1966-67, the number of institutions with campus-wide research committees has more than doubled, written statements of policies and procedures have gone from zero to 12 and the number of research directors has increased from 6 to 31.

In 1966-67, the number of dollars budgeted for research was nil. In 1969-70, $141,000 has been budgeted specifically for faculty research projects.

Presidents and Coordinating Council members were in agreement concerning this Consortium objective on the pre-test that institutional and faculty research operations should exist at their institutions, but did not now exist.[2]

Objective III: to cause institutions to cooperate on interinstitutional projects.

In 1966-67, there was no interest on the part of junior colleges in Title III of the Higher Education Act. In 1969-70, Oklahoma has two junior college consortia, one funded in 1968-69 for $69,000 and the other funded in 1969-70 $194,000 from Title III. Eight Consortium institutions will receive $989,145 under Title III of the Higher Education Act next year.

After an initial Oklahoma Consortium on Research Development organizational meeting, computer directors have held a series of meeting during the last two years to exchange ideas and computer applications.

Institutional research directors have also held a series of meetings during the last two years to develop compatible data systems, after an initial Consortium organizational seminar.

Oklahoma institutions have developed plans for an annual research reporting conference, patterned after AERA, after holding a successful conference in 1969-70 with support from the Oklahoma Consortium on Research Development.

The Consortium encouraged and arranged for the University of Oklahoma to obtain the entire ERIC data base on tape and supported several seminars to demonstrate how the data base could be queried via computer. The University of Oklahoma has since developed an ERIC retrieval service available to anyone in Region VII at cost. Retrieval time for most questions is about six minutes.

Again, presidents and Coordinating Council members were in agreement as to this Consortium objective on the pretest. They indicated that while institutions were not cooperating on interinstitutional projects, they should do so.

Objectives IV and V: to provide institutions with an ongoing mechanism for continuous interinstitutional program development and research opportunities broadened to involve non-educational agencies.

On February 3, 1970, the Governor of Oklahoma signed into law a bill authorizing and directing the Oklahoma State Regents for Higher Education to establish and maintain a system of televised instruction as an integral part of The Oklahoma State System of Higher Education. Approximately $1.5 million was available for the capital requirements of the system ($1 million from the state and $500,000 from industry) and $200,000 for operational expenses, at the time this paper was written. This project was given some support from an Oklahoma Consortium on Research Development media conference and a task force position paper.

Committees have been organized to get educators and industrial representatives together to develop an educational program to meet the need of industry.

Present plans call for the expansion of the initial backbone microwave television system as the need arises.

While the perceptions of "what exists" and "what should exist" were similar for all presidents and Council members as to their willingness to provide an ongoing mechanism for continuous interinstitutional program development and research opportunities, broadened to involve non-educational agencies, there were some significant differences found between junior college presidents and all other groups as to what exists. The junior college presidents agreed with the statement to a far greater degree than did Coordinating Council members from either junior and senior colleges or senior college presidents.

Overview

In the fall of 1967-68, Dr. Dressel made his first visit to the Oklahoma Consortium on Research Development. After visiting with the staff, attending a development seminar, taking part in the first Consortium workshop and then reviewing the Consortium objectives and plans, he wrote the following:

> "My initial reaction was that of amazement and doubt as to whether a program of the magnitude embraced in the materials which I read could possibly be carried out with the staff and financial resources available. Some elements of this amazement and doubt continue, but observation of two programs, reading of the materials, and discussions with the directors result in the addition of generous measures of admiration and optimism".

After three years of activity, all people involved with the Consortium report that it has been successful, that it has to a large degree accomplished its objectives.

Dr. Sol Renaldi, U.S. Office of Education, and Dr. Harold Haswell, Director of Educational Research, Region VII, have expressed the view that the Oklahoma Consortium on Research Development might well serve as a model for other states who are interested in the upgrading of the research capability of faculty, the stimulation of program development and evaluation efforts in education, and the promotion of interinstitutional research cooperation.

The following elements are regarded by the Consortium staff as the keys to the success of the Consortium:

> The Oklahoma State Regents for Higher Education, the ongoing state agency for state level coordination and leadership, was the contracting and coordinating agency for the Consortium.
>
> A Coordinating Council and Steering Committee, representative of the Consortium membership, developed policies, objectives and procedures for the Consortium.
>
> Consortium membership was open to all interested institutions of higher education in Oklahoma.
>
> The state's two universities were actively involved with the Consortium in terms of staff, facilities, and other support.
>
> The Consortium program of activities was flexible enough to be responsive to the needs of each institution.
>
> Lines of communication between the Consortium staff and the Coordinating Council member at each institution were established early and maintained throughout the project.
>
> A specific statement of objectives was developed by those people to be involved in the project.
>
> The Consortium asked institutions to accept specific responsibility for Consortium activities and to start early to develop plans for the establishment of an ongoing research operation for their own institution.
>
> The faculty and administration of the developing institutions of higher education in Oklahoma were open to suggestions, ready to try out their own ideas, and had the ability to learn how to conduct research.
>
> The faculty and administration of the developing institutions of higher education in Oklahoma were receptive to the idea of interinstitutional cooperation.
>
> An evaluation procedure, which included outside consultants, was built into the structure of the

Consortium and provided the feedback needed to constantly revise and improve the program.

The staff leadership for the Consortium was continuous throughout the project, the activities of the Consortium were well documented, and the rules and regulations of the U.S. Office of Education were closely followed.

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[1] Statements taken from an earlier study by Dr. Paul L. Dressel, used with his permission.

[2] Due to factors beyond the author's control and beyond belief, only the pre- test results are presented for the two opinionnaire instruments. Hopefully, this paper will stimulate enough interest on the part of some readers to cause them to request a copy of the Consortium evaluation when completed.

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A MODEL FOR IMPROVING RELATIONSHIPS BETWEEN JUNIOR AND SENIOR UNITS OF A STATE UNIVERSITY SYSTEM WITH SPECIAL REFERENCE TO THE PROBLEM OF THE TRANSFER STUDENT

M. Frances Kelly
State University of New York at Buffalo

Many of us are familiar with the attempts made by people in colleges to communicate with individuals at other institutions when similar concerns are felt. Typically, one or a combination of the following is put into effect:

1) An administrator at one institution contacts an administrator at another institution, and/or
2) a task force group or member of a committee at one institution is assigned the responsibility of contacting an individual or group of individuals in another institution.

Invariably, people with unassigned responsibility become involved in the process. In any case, it is the visible allocation of. . . "you contact". . . that activates the process.

Communication – Without

We have become increasingly obsessed with the demands of external communication in higher education today. There is good reason for this. But there is also a tendency for less scrutiny and analysis to be given to the vagaries of communication within one organization. Much of the linkage maintained within an educational institution is a function of the direction and response of a relatively small number of individuals who, except in crises, conduct the business for their colleagues.[1] Research indicates that colleges and universities are rather fragile structures bound by a "social cement which consists of equal parts of reciprocity and trust."[2] Cooperation among those threatened by the new confrontation techniques, nurtures small oligarchies of power within not only the faculty, but also within the administration, the student bodies, and among the various constituencies of professional staff.

The Model for Improving Relationships between Junior and Senior Units of a State University system is an attempt to focus on some groups of people and place them into new juxtapositions of reciprocity.

While the emphasis for this model is on activities within one institution, external relationships are involved by the participation of both junior and senior colleges in the area.

The Problem Situation[3]

Transfer students are coming to the State University Center at Buffalo in increasing numbers and already represent a substantial proportion of the student body. In the Fall of 1969, for example, 931 transfer students, roughly one third of all new students, were admitted to the Division of Undergraduate Studies, 425 in the lower division, 506 in the upper division. The sheer volume of applications from students hoping to transfer is also impressive – some 3,400 in all for the 931 actual registrations in the Fall of 1969. According to the Director of Admissions and Records, these applications will probably continue to increase at a rate of 15 to 20 percent each year. Statewide estimates of future transfer applications are equally striking. Within New York State, the number of junior college graduates seeking transfer will almost double within the next five years. In 1969-70, some 8,400 community college students graduated from transfer programs and of these, 6,700 sought admission to an institution of higher education within the state. It is estimated that in 1975-76, 12,000 of the approximately 15,600 transfer graduates will seek admission to four-year colleges and universities. These estimates do not include the increasing number of graduates of junior college career programs who are transferring – a phenomena that argues the point that the line between **transfer** and **career** is vague, unrealistic and almost meaningless. There is a tendency for four-year colleges and universities to become dramatically responsive to the input of students at the junior level.

Though the university presently does rely on certain understandings regarding transfer students, their educational career lines – and the manner of their admission, there has been general ignorance about two-year colleges and/or their impact upon both the institution and the State system. Admissions decisions for example, have been made in the absence of time-spanned documentation of student performance. Rather well calculated assumptions have formed a basis for the admissions decisions made; these decisions have not been tested. Up to the present time, an admissions policy for transfer students have not been fully developed nor formally approved by an appropriate Senate body.[4]

There are at least three major strategies for energizing an institution so that it may cope with a developing phenomena.

1. One can form work-focus groups which represent the various but specific constituencies involved in the situation.
2. One can form collaborative committees or task force groups which represents various interests.
3. One can form a mix of special groups and collaborative agents to examine the situation.

The creation of new groups often moves through several stages. Initially, a group is simply sponsored by an agent within the institution. In the current situation, the Division of Undergraduate Studies gave us carte blanche to set up collaborate, special interest units.

We are now at a point, however, when the usefulness of the various groups developed has or has not been confirmed operationally. The initial basis of legitimation was administrative fiat. Now, the initial effort must be institutionalized if more than a temporary impact is to be maintained.

Components of the Model

The model established at the State University of New

York at Buffalo is a combination of group configurations (special interest and collaborative).

The characteristics of the established groups are a function of: a) Administrative intuition, b) a working knowledge of the kinds of publics within the institution, c) a familiarity with the ambience of the organization, and d) a feeling for the operational "fit" of certain strategies of group effort.

There are five sub-groups involved in the activiation of this model: 1) Transfer students at the university, 2) faculty within the undergraduate division of the university, 3) professional staff members, 4) a graduate student research team, and 5) a staff coordinator from within the undergraduate division.

Each group is described according to:

1) The **rationale** for organizing the sub-group,
2) the **major function** or objective of the group,
3) an **evaluative statement** concerning how closely the unit has approached its objective, and
4) a **recommendation** for the groups future operation, activities or modification of function.

Component I Transfer Student Advisory Board (TAB)

Rationale –

Preliminary interviews with transfer students at the university convinced us that transfer students have special dimensions of campus experience which are unique. Also their prior educational exposure, in another kind of educational setting provides certain constraints as well as advantages for institutional adjustment. This conviction suggested the feasibility of a campus unit organized for them as a distinct group.

Major Functions –

The Transfer Advisory Board (TAB) is a strategy for involving transfer students in the determination of better ways to assist their peers in making a transition to a new situation. TAB members:

1) Participate in special summer orientation programs designed for transfer students,
2) act as transfer advisors for special programs designed for transfer students, as well as visiting groups on this campus,
3) explore means of developing closer relationships between the University Center and those institutions which provide a growing input of transfers, and
4) are visibly available and accountable to faculty groups and professional staff units who wish to utilize transfer students as resource people.

Evaluative Statement –

TAB has become increasingly visible as a student spokesman for transfer affairs on campus. The group has organized an Executive Committee, which meets monthly, held open meetings for transfers at the university and played an important leadership role in the following areas.

1) TAB assisted in the development of special summer orientation programs during the summer of 1969 and 1970. Several TAB members serve on the general university orientation committee. A member of TAB authored the proposal for the design and operation of the summer 1970 orientation program.[5]
2) TAB suggested that local two-year college campuses be visited by transfer student teams. The student directed teams (including faculty and professional staff observers), discuss with potential transfers, what it is like to be a student at the university. The primary aim of the visitation group is to serve as a source of information for those students wishing to transfer. Emphasis is placed on the non-academic aspects of transfer problems (housing, financial aid, and general social and or institutional adjustment). A secondary goal is to make the existence of TAB known to the university candidates.[6]
3) TAB maintained, through its chairman, a developing relationship with a faculty committee working on a transfer admissions policy proposal. TAB's chairman is an official member of this committee.
4) TAB developed a survey for assessing the financial needs of transfer students. This survey resulted in a modification of the packet sent to new transfers so that earlier knowledge of financial resources is possible.

Recommendations –

It has been recommended that TAB become an official student organization on campus. As a special student organization, TAB will have the benefit of a substantial budget. It is the intent of the Executive Committee of TAB that the unit expand its visitation activities, and assume greater responsibility, for both social and academic orientation on campus in concert with appropriate professional staff units.

Component II Faculty Within the Undergraduate Division of the University

Rationale –

We assume that it is appropriate for faculty to provide input for student admission's criteria. Thus, faculty need to be knowledgeable about who is entering the institution. There are benefits to be derived from grooming a number of faculty in the admissions area. Too often, it seems, faculty delegate their hard won responsibility for crucial input to service units because they do not have the time nor inclination to collect background information.

Major Function –

An ad hoc Faculty Transfer Articulation Committee was established within the Division of Undergraduate Studies. The all-faculty committee, representative of each unit on campus was chaired by a member of the undergraduate division's senior staff.

It was apparent from the beginning, that the committee tackle a major problem – The absence of any appropriately designed transfer admissions policy. The major purpose agreed upon by the committee was thus to develop "A Proposal for a Transfer Admissions' Policy at the University."

A by-product of accomplishing this goal was that the group itself became well educated about many aspects of transfer affairs. In actuality, the initial months of committee meetings were modifications of "Community College 101."

Evaluative Statement –

The committee held 14 meetings over a period of 10 months. Many of these meetings lasted up to three hours and by May of 1970, a transfer admissions proposal was drafted. The faculty members soon recognized that they could not consider admissions criteria in isolation. They engaged in philosophical discussions about the proper uses of university resources and the reasonable expectations of competency on the part of their colleagues.

The Faculty Transfer Committee has evolved into a dependable and knowledgeable work unit. The Division of Undergraduate Studies will increasingly depend on this committee's expertise as problems ancillary to the whole issue of transferability and institutional adjustment emerge.

Recommendation –

It has been recommended that the Faculty Transfer Committee become a standing committee of the Division of Undergraduate Studies and that it be chaired, from now on, by a faculty member from the committee.

Component III Professional Staff Members

Rationale –

Within the university, there are a myriad of people (often forgotten by some segments of the system), whose job responsibilities have a tremendous impact upon the adjustment and personal accommodation of new students. A cross section of professional staff can be drawn together, and their resources recognized collectively. The fact that such a group is not typically formed, says much about the various strategies of empire building which survive in campus communities.

Major Function –

A professional services staff advisory group was formed to identify the range of resources available for transfer student assistance and to generate a cooperative movement among the staffs represented so that transfer affairs might be given a priority.

Members of the Executive Committee of TAB were told that they should consider members of this group as resource people. This worked especially well in financial aids (a TAB member worked out a financial assistance survey instrument with the aids representative) and housing (TAB members met on several occasions with housing personnel).[8] A liaison was established with the undergraduate advisement staff particularly in the implementation of a special summer transfer orientation program.

Evaluative Statement –

This component has not been fully utilized either by the students or the senior staff office. A dilemma exists over the question of mix between the professional staff group with TAB and the Faculty Committee. We affirm the separateness of TAB as a self directed unit. Further experience supports the validity of a faculty committee which includes student representation. Without the critical perception of needed involvement by either students or faculty, however, the professional service advisory group exists in limbo. On the other hand, we can argue for a linkage only when needed or only when a special situation is to be improved.

Recommendation –

That the TAB Advisory Group be dissolved but that crucial staff personnel be invited to sit with the TAB Executive Committee and/or the Faculty Transfer Committee on an open basis.

Component IV Graduate Student Research Team

Rationale –

Expediency is sometimes the foster-mother of invention. Data on transfer students has been desperately lacking at the university and no operational research arm existed either centrally or within the undergraduate division which could immediately undertake a thorough study of transferability.

Major Function –

We invited three doctoral students (two in Higher Education and one in Educational Administration) who had come to us for independent study, to consider the possibility of such a study. The three students agreed to design a study which could, in effect, assist in the evaluation of the presently operative transfer admissions procedures at the university. Their efforts involved:

1) A review of relevant transfer research nationally and within the State system,
2) a tallying of all new transfer registrants as of the fall of 1969. Items included the college they transferred from and the transferees admission's grade point average, and
3) a recording of GPA's after the first and second semesters completion.

It was necessary for the students to write a computer program which would consider a number of other variables besides academic grades, programs, and types of colleges.

The students report that . . . their suspicion, based on a preliminary evaluation of first semester grades, indicates that the present unidimensional transfer admission's procedure may be substantially lacking in realistic predictability.

Given this hunch, the continuing purpose of the study will be to again evaluate the present procedures. The assumption is that the addition of second semester grades will again provide evidence of the weak predictability of the present procedure. Further, the research team hopes to develop a multi-dimensional (multiple-regression) approach to transfer admission to SUNYAB.

Evaluative Statement –

The student research team has already provided necessary data to the faculty committee – data which might never have been pulled together had it not been for their work. The resourcefulness of the students and the learning benefits derived by them have been doubly rewarding. It is expected that their full report will be widely studied on campus.[9]

Recommendation –

It is inexcusable that transfer student research continues to be given less than top priority on many campuses. It is totally absent on some.

If Institutional Research operates as an informational, fact finding, self study arm of the central staff, then it becomes impossible for all priorities to be served.

Inviting graduate students to assist in the documentation of transfer material is a strategy for beating the system. The topic itself is not so sensitive that they need be blocked in their search.

Component V Staff Coordinator

Rationale –

Someone, somewhere has to make all the connections; there needs to be a multiple thrust in any articulation effort. We begin and end with the proposition that an upper-division institution must be willing to make a visible full time commitment to transfer student affairs. Few people recognize the amount of spade work necessitated by the development of a linkage system which focuses on transferability. Our experience strongly affirms the placement of the coordinator within the academic affairs division of central administration.

Major Function –

The administrative liaison for transfer affairs must explore all means for facilitating bridges between junior college and colleges offering upper-division programs. This involves:

1) Working as a catalyst with faculty who wish to learn more about junior-community colleges,
2) Collecting and disseminating current material on junior colleges (their programs and their students),
3) Coordinating and arranging meetings between departments at the university and the junior college,
4) Arranging for a regional conference on relationships between junior-community colleges and upper-division schools in particular areas,[10]
5) Act as major advisor to the student group (in this case, the Transfer Advisory Board),
6) Maintain statewide contacts with transfer counselors in junior colleges who request information on their former students,
7) Develop linkages nationally with individuals in other upper-division units who pursue similar concerns,
8) Maintain a visiting relationship with colleagues in local junior colleges, and
9) Act as a transfer information feeder to administrative units within the university.

Recommendation –

We are convinced that every college and university offering upper-division programs will need to house an Office of Transfer Affairs. In California, such a unit is called an Office of Relations With Schools. Florida and Texas have similar structures.

While certain pressures and tensions within the educational community may intercede for the establishment of other offices, we can only wait.

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[1] T. R. McConnell, report on "Faculty Participation" in the *Research Reporter*, Center for Research and Development in Higher Education, University of California, Berkeley, Volume V., Number 1, 1970.

[2] Harold Hodgkinson, report on Campus Governance Research in the *Research Reporter*, Center for Research and Development in Higher Education, Volume V., Number 1, 1970.

[3] From a Report, "Proposed Transfer Admissions Policies for the State University Center at Buffalo," The Faculty Transfer Committee, SUNY, Buffalo, May 5, 1970.

[4] Numerous correspondence with other units of the State University system indicates that this is a typical, not unusual predicament.

[5] Edward Fees, "A Proposal and Guide to Transfer Orientation Programs," SUNY, Buffalo, May 1970. (mimeographed)

[6] A full report of the TAB visitation group is available upon request.

[7] State University of New York at Buffalo is divided into seven Faculties including several professional schools. The committee has a membership encompassing each of these sub-units.

[8] We are informed that, for the first time, some on-campus housing will be available for transfers in the fall of 1970.

[9] A final report of the study is expected to be available by September 1970. For a copy write to Mr. James Parker, Office of Admissions and Records, Hayes B, SUNY, Buffalo 14214.

[10] A copy of the proceedings of this Conference held March 23, 24, 1970, is available upon request to the Office of the Dean, Division of Undergraduate Studies, SUNY Buffalo.

COMMUNICATING WITHIN THE INSTITUTION – ADMINISTRATIVE UNITS

COMMENTS ON INSTITUTIONAL RESEARCH: WHAT ROLE IN ADMINISTRATIVE DECISION MAKING?

John E. Nangle
Western Michigan University

In the keynote address before those attending the 1969 A.I.R. Forum, Frederick Bolman of the Esso Education Foundation said: "My interpretation of Institutional Research is that it must now more than ever **guide** us so we may really see that the problems are, and then, of course, **help us to solutions** . . . Genuine Institutional Research should be the nerve center of the institution; it is an **early warning system of impending crises,** and it helps to achieve goals" (i.e., define what a University ought to be; bring about managerial efficiency and instructional effectiveness.)

In his message on higher education sent to the Congress on March 19, 1970 President Nixon said, "The turmoil on the nation's campuses is a symbol of the **urgent need for reform** in curriculum, teaching, student participation, discipline and governance in our postsecondary institutions."

Our own A.I.R. President, Thomas Mason, observed in the October, 1969 issue of the **Newsletter** that: "Institutional Research is not a singular, highly concentrated profession, but a complex system of roles involved in **analysis, planning**, and **management** in institutions of higher education."

Lastly, in an article describing the Regional Education Laboratory of the Carolinas and Virginia which appeared in the March 30 issue of **The Chronicle of Higher Education** there was this recommendation for a new kind of administrator: "This administrator should be a catalyst or change agent for the purpose of conducting or coordinating institutional research in the gathering of needed data, and keeping abreast of current activities and trends in higher education in order to interject this knowledge into the decision-making process."

Taken together, the message seems clear: There is, first of all, a consciously recognized need – an imperative need – on the part of higher education for solid information which will help guide and ultimately aid in determining institutional destinies; secondly – that institutional research has perhaps the most critical role to play in meeting this need; and thirdly – that such a responsibility must in one way or another impinge directly upon the planning, management and decision-making functions of the institution.

It is within a background of ferment and change that we examine some of the issues surrounding and affecting the delineation of our role. This period is critical not only for the future direction and form of higher education in this country, but also for the further shaping of institutional research as an acknowledged and valued profession.

We share a mutual concern that the products of our efforts are relevant and have a positive impact upon our respective institutions. We are addressing ourselves in good measure to the manner in which we can make our influence felt in terms of some kind of accommodation at the staff/administrator interface. This is at a time when faculty and students alike are working for their share of influence in decision-making processes. There are potentially a number of ways in which this accommodation may be achieved, and, perhaps, there is even an optimum arrangement given a certain set of circumstances. It is the general task of this special topic session, then, to explore ways of enhancing and assuring our effectiveness from a multi-faceted perspective entailing functional role relationships, inter-communications, power and influence exchanges, and the maintenance of professional identification and integrity.

In way of brief summary, then, perhaps it is accurate to say that what we have been concerned with in its elemental form, is a process of influence as we attempt to further delineate a meaningful, yet distinct role for ourselves in this most dynamic and stressful of periods. Intentionally our topic has for the purpose of stimulating discussion, been drawn in somewhat dichotomous terms. This forcing, of course, may realistically reflect some points of view and modes of operation, but, of course, many others range somewhere between nearly total involvement in the shaping of institutional policy and participation in honest-to-goodness decision-making to almost complete confinement to service entailing the generation of information, per se, which is then to be consumed and used by others.

We seem to be talking about, at least implicitly, various possible definitions for effectiveness and the criteria used in making judgements about the effectiveness of operations for offices of institutional research. Certainly, an important segment of this often elusive characteristic is our ability to communicate – the effective transmission of information which will prove **useful.** The central issue, it seems to me, must be viewed along two dimensions. One deals with what really constitutes "useful", and whose judgement is involved in this kind of determination? Is it unilaterally decided by the administrator; is it wisely chosen by the IR man, or is it perhaps a joint determination between them? Of course, if the decision-maker and the institutional researcher were in fact functionally one-in-the-same, then this open loop is closed, but at the potentially great expense of a loss of objectivity and confidence. Obviously, a determination of what is "useful" on solely pragmatic grounds neglects for the moment the basic or pure research information which is not action-oriented in terms of immediate applicability in a planning or managing sense, but nonetheless may prove of value in the future.

The other dimension concerns itself with how this "useful" data becomes injected into the decision-making process. Is this to be an operational extension of the institutional researcher himself? What greater opportunity for job satisfaction and self-fulfillment? Or is the follow-through to be left solely up to an administrator whose domain remains relatively sovereign in this function.

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A high level of involvement may be a natural consequence in some settings where role ambiguity co-exists along with a certain measure of freedom for carving out one's own niche institutionally. The boundaries here are marked by the initiative of the professional person involved and to some extent by the traditions and historical antecedents of the institution.

We are still in the midst of a process of evolution with respect to the definition of our role – or is it roles? Our own identification with the profession requires us to come to grips with this question: Am I an in-house consultant, a scientist whose primary concern is doing "research", a provider and storehouse of information, a member of the management team who helps make decisions and shape policy? Which do I do and in what proportions? Admittedly, in the last analysis a great deal must rest upon the nature of the personal relationships which the institutional researcher can develop and maintain, upon the respect he can win for the application of his professional expertise, and of course, upon the power-politics of his institution.

There are many ways to define the level and nature of involvement in decision-making. My own view is that we are not administrators of the institution. Our job is to provide useful information interpreted in action-outcome terms. To do this effectively places an obligation upon us as professionals to bring about a closed communications loop. We must not be isolated from the management function in the sense that we have to know the problems and issues, the nature of contemplated changes, and potential policy modifications. In short, the administrators must take us into their confidence for us to be of maximum service and value.

One could say for the sake of argument that the IR man can, theoretically at least, present this data in such compelling terms and directed so cogently to specific problems that the wisest course of action is made practically self-apparent. In this instance the decision-maker nominally is the administrator, but functionally it turns out, though indirectly, to be the institutional researcher who is presumably serving in a staff capacity in the best traditions of that organizational concept.

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WORKABLE METHODS OF COMMUNICATING INSTITUTIONAL RESEARCH DATA

Jerry L. Kirks
Wayne State University

"I am reminded of those people who put together gears, shafts, levers and wheels which convert input energy into absolutely nothing." Colonel Donavan Burton commanding officer of the Army Research Office in Durham, North Carolina is discussing data management and efficiency in his introductory speech at the Office's Operations Research symposium held in May 1969. However, he could very easily be discussing many institutional research reports, which after many gyrations and manipulations of data, end up into absolutely nothing as far as meaningful management information is concerned. Colonel Burton continues "We have so called data banks, unending reports and a veritable deluge of studies, statistics and operations information. One wonders if plans exist on how to use this enormous amount of information collected with so much pain and expense."[1]

It would seem that Colonel Burton could be describing the Institutional Research plight in many large universities today. The growth of Institutional Research closely parallels the growth of computerized data available to decision makers, which has resulted in volumes of information available. Many of us don't realize, however, that the decision makers, in some cases, lack the expertise or the time to do a sufficient analysis and synthesis of such data. What is needed, rather than data going directly from the computer to the decision makers and only passing through Institutional Research, is someone to synthesize, analyze and bring out the important facets of the data.

The Office of Institutional Research at Wayne State University for the past several years has undergone the same growing pains that other offices I'm sure have experienced due to the computer being able to produce more data, in some cases, than administrators have been able to absorb or strategically use. An examination of the early proceedings of the forums of AIR indicates that the emphasis in the early stages of the Association and in the development of our field was primarily on the production of statistical reports. These reports include class size studies, projection studies, major curriculum or crossover studies and many pages of financial data reporting input-output analysis of the universities. These reports in some institutions have received high visibility, but in other institutions have been filed away simply because they have been on 8½ by 14 paper or had computer symbols, indicating to some, that they were not easily understood.

In an exploration of how Institutional Research reports were used by Deans at this University, I discussed the reports with the Deans and their administrative assistants. In most cases I found that statistical reports were routed automatically to someone in the department in charge of statistics and very seldom had the attention or the visibility of the Dean himself or herself as the case might be. One Dean actually indicated that anything that comes in on computer-like paper was actually filed away because he felt it was too difficult for the average layman to understand.

Examining the needs for information of central administration at Wayne State University over a four year period, the reports produced by this office and their intended uses compared to their actual uses, has prompted me to share with other members of the forum the introduction of some new measures of communicating to executive officers at the University.

This is not an in depth analysis of the theory of Institutional Research, such as I delivered two years ago,[2] nor is it a report on how to develop a management information system or the hardware necessary to produce the same. These matters do seem to be a constant topic of discussion as can be witnessed by our forum this year. However, the primary purpose and title of the present forum is "Communications in Higher Education." Therefore it seems appropriate to review, in a very pragmatic way, the type of management reports that have worked at our institution. I hope the methods used by others will also be shared so that we may find out what other institutions are doing to utilize this massive amount of computing information, hopefully available at most institutions.

The management reports which I referred to include: **TrenData** which is now going into its sixth edition, a Statistical Review showing vital statistics of the University over a six year period, a Statistical Trend Profile summarizing the statistics necessary for decision making by departments by attempting to combine the essence of computer printed reports into meaningful, usable information and a specialized report of one or two page length covering special topics which arise in the University and needing the attention of the executive staff.

TrenData

The Office for Institutional Research in conjunction with a part of its operation, the Administrative Reference Center, had since 1961 produced a report called the "Trend Sheet". This "Trend Sheet" summarized essential information such as finance, enrollment projections, state allocations, etc. for Wayne State University and other sister institutions within the state. This report was circulated primarily to members of the President's staff and the circulation was stopped at this point. It was felt, in keeping with the theory which I discussed two years ago, that Institutional Research was responsible for producing information that could be used in the adaptive sub-system functioning of the University. That is, what information external to the University about changes in climate, changes in the political arena or changes in higher education in general should be summarized for the decision-makers of the University to enable them to base their decisions on better founded facts? **TrenData** was created for this purpose based on the earlier experience with the "Trend Sheet". The first issue of **TrenData** was designed to produce a national, state and local view of how enrollment projections were viewed. The report from **School and Society** summarizing enrollments in colleges and universities by discipline was used along with enrollment predictions by state institutions, actual enrollments in these state institutions, and actual and predicted enrollments by college for Wayne State University. This first report entitled "Enrollment Trends" was circulated to the President's staff, other executive officers and Deans. Interestingly, the major response came from the Deans of the University, who had not previously received the "Trend Sheet". The second edition of **TrenData** had to do with financing higher education and was composed of an analysis of six years of state financing, voluntary financing for Wayne State University and allocations to other state universities. It had a special section dealing with a state-wide study of the impact of federal and non-federal funds on science research and education in the state. The second edition was primarily circulated to the Dean's and the executive officers of the University. The third issue of **TrenData** had to do with Graduate Education and summarized the report from the National Academy of Sciences, **Doctorate Recipients from United States Universities, 1958 through 1966,**[3] with particular emphasis on how Wayne State University compared to other institutions in the state and nation. In addition to a summary of this national report, also presented were selected aspects of the profile of the graduate student at Wayne State University which had been derived from a computer study necessary to determine the effect of the selective service change on the Universities' graduate program. At this time, we decided that since the report was of general interest to department chairmen as well as other executive officers in the University that they should be included in the distribution. Interestingly enough following the same phenomenon that occurred with **TrenData No. 1** when we extended distribution to Deans, it was the department chairmen that responded affirmatively to receiving the report and indicated it was useful. The fourth edition of **TrenData** was a summary of Wayne's faculty and academic staff and summarized some national studies in the field of faculty mobility showing statistics for the average faculty member compared to research that we have done here at the University. This report has received widespread use and many additional copies have been requested. The fifth and last **TrenData** to date reported on Doctoral Programs. It was a finer breakdown of tabulations appearing in **Report on Doctoral Programs,**[4] a publication of the Office of Scientific Personnel, National Research Council. This was a study in which Wayne participated along with other institutions and was provided institutional data as well as summary data for the entire group. This report has received a number of additional requests from the academic departments and the graduate division in particular, which has used the report for external communications demonstrating the growth of Wayne's Doctoral Program. Other editions of **TrenData** are in process, summarizing the student research done at the University and other topics which are of immediate interest to University administrators and the University community in general.

Overall, **Trendata** has been a success. It has been a way of presenting rather complex data in a highly readable format and placing it in the perspective of what's happening at the national and state level.

A Six-Year Statistical Survey of the University

Every university or at least most universities have a statistical collection which can be affectionately referred to as the red book, or the blue book or the green book. This usually involves college, departmental and university statistical data. The attempt in presenting a Six-Year Statistical Survey of this University was to summarize both graphically and by tables, pertinent data which could be used by people both inside and outside of the University to see what the six-years of growth under the quarter system had produced at this institution. As you can see from the copies that have been distributed we used special kinds of chart-making materials to graphically present this picture. Of most use in this report was the index in the front of the report showing six-year growth by major category of data. This report has received widespread distribution and is now in an up-dating stage including seven years of the University.

A Statistical Trend Profile

The Statistical Trend Profile was an attempt to combine data from enrollment reports produced by the computer, a class size study, a major/curriculum study showing the curriculum of the student and the number of hours taken, both within his major department and other departments, and also showing a breakdown of what the teaching load was by curriculum of other departments in the University, a scope of course offering study showing the number of courses offered by each department, and various financial reports of the University. The reason behind presenting the Statistical Profile was to have decision making information readily available at the department, college and university level. This report has been useful. However, due to changing over of computing systems, which I'm sure many of you have experienced, we have not recently had the computing reports to analyze and consequently, we have not up-dated this report recently. Of particular interest here is the fact that we did not simply circulate these computing reports directly as they came from the computer. Where the class size study had many pages of average class size by various sub-course type, average class size by departments, average class size array and various other statistics, we took only those things we felt were essential to the decision making process and included those in the report, saving many pages of reports being received by the operating units.

Information from the statistical profile was recently used in Wayne's legislative budget hearings through using graphic academic indices, including the number of students, number of faculty, increase in student faculty ratio and the increase in cost per student credit hour over a six year period. The graphic representation of these figures using overhead projectors was reported as being one of the most effective presentations the legislature had seen.

OIR Reports

OIR Reports was a derivative of **TrenData**. We found that **TrenData** where it was originally to be a short report, because of the complexity of the information being presented turned out to be an average ten or fifteen page report. The need arises at times for specific data to be circulated. This kind of data we present in what we call OIR Reports. The first report dealt with state appropriations, institutional budget requests, governor's recommendations for all of the State

Institutions in Michigan, with particular reference to the picture at Wayne State University over a five year period. The second OIR Report simply displayed the increase in student credit hours taught by class level at the institution.

Rensis Likert stated in his book, **New Patterns of Management**, "The quality of the decisions of an organization rest squarely on the adequacy and accuracy of the facts available to those who make its decisions."[5] I feel that computing reports or research reports high in complexity, demonstrating a high level competency in research skills, many times are not read and if read not understood by the people who make the decisions in an institution. Consequently, the problem presented to all institutional researchers today is what interpretation is necessary for the data. After all, we who produce the data should be most familiar with its implications, and how can the data best be presented. Some data lend themselves to being presented in a tabular form; other data can be more readily seen, appreciated and utilized if presented in some kind of a graphic presentation. One of the challenges presented to Institutional Research now is making data useful. We are reaching a point in performance budgeting where even our budgets are subject to scrutiny. If we have produced only five major reports over a period of a year, along with all the miscellaneous requests received by an Institutional Research Department and we must not forget the questionnaires which most of us have responsibilities for, we could, based on a hundred thousand dollar operating budget, cost out each of these reports in excess of ten thousand dollars per report. The question is whether the data in these reports is really worth the amount of effort and dollars being utilized in producing them. If the data can be summarized and information, such as the academic indices which we presented to the State Legislature this year, can be used for supporting the universities budget request then most people would agree all the effort is worthwhile. If on the other hand, the reports, as meticulously prepared as they may be and as statistically sound as they may be, simply collect dust on the shelf, then I feel we have not performed our function.

Two years ago, I suggested Institutional Research could contribute to the organizational effectiveness of the universities by acting as an agency for collecting information external to the university to assist the university in adaptive decisions that had to be made to change its operations to meet a changing environment. Secondly, that Institutional Research should be viewed as a regulatory mechanism studying the input in relation to the output through various cost studies, program analysis studies, program budgeting etc. Both of these directions for Institutional Research require that the data be used. It was with this thought in mind that this brief presentation of reports we have found useful at Wayne State University has been prepared for your consideration.

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[1] Quoted in "Date Management, Less is More," *SDC Magazine,* Systems Development Corporation, Santa Monica, California, Feb. 1970, Vol. 13, No. 2. p. 1.

[2] Jerry L. Kirks "Organizational Effectiveness and Institutional Research" in Cameron Fincher, Ed., *Institutional Research and Academic Outcomes,* The Association for Institutional Research, 1968.

[3] National Academy of Sciences, *Doctorate Recipients from United States Universities, 1958-1966,* a statistical report prepared in the Research Division of the Office of Scientific Personnel under the sponsorship of the National Science Foundation, Publication 1489. Washington: National Academy of Sciences, 1967.

[4] National Research Council, *Report on Doctoral Programs,* Office of Scientific Personnel, National Resource Council, Washington D.C., 1969.

[5] Rensis Likert, *New Patterns of Management,* McGraw Hill, 1961. p. 211.

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A TECHNIQUE FOR IMPROVING COMMUNICATION WITHIN AN INSTITUTION

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The purpose of this paper is to describe how the Delphi technique was used to improve communication among both on-campus and off-campus groups concerning the importance of goals for an institution.

Why is it important to improve communication among such groups as students, faculty, administrators, trustees, alumni, and different community groups? According to the Special Committee on Campus Tensions of the American Council on Education, improvement of communication among campus groups is a very important factor in easing campus tensions. Identifying the goals of an institution is an example of one important area that depends on more effective communication among different groups. It is becoming increasingly clear that higher education is no longer an enterprise exclusively for the elite. With the rise of egalitarianism, science, and technology, what was once the prerogative of a few has become a necessity for many. This larger and more heterogeneous student group has increased the problems of goal identification for most institutions. Even in such well-known general goal areas as teaching, research, and service, many questions have arisen concerning priorities. It is important that the academic community identify the goals common to all its constituents and that each individual institution select those goals appropriate to its distinctive purpose.

Why may it be advantageous for single institutions to be able to articulate their own unique sets of goals? The reasons are many. Mission articulation is at the heart of an institution's self-definition. Only after it decides what it wants to do (and presumably can do well) will an institution be truly able to preserve its coherence, autonomy and integrity; without knowing its own mind, how can the institution know how to respond most effectively to the increasingly varied demands being made on it? In a time of financial crisis, a college that regards its aims as uniquely valuable to certain population groups will need to make its case convincingly if the institution is to expect support. Goal articulation is also regarded as essential to system evaluation, to appraisal of the effectiveness by which institutions are accomplishing their avowed objectives, again a pressing concern in a time of weakened taxpayer and alumni confidence in the worth of the colleges.

During the past five years, many higher education institutions have felt a crisis of authority on campus where the younger generation takes nothing for granted, and a crisis of confidence off campus where politicians and taxpayers perceive the institution as being unable to manage its affairs. The college campus has become a battleground. Conservatives view the higher education institution as an instrument for sustaining and strengthening our present society, while radicals view it as a means for forging a new society. The intensity with which higher education institutions are being pulled and tugged by these different groups stresses the importance of assessing what these different groups want from colleges and universities. The views of such groups as students, faculty, administrators, alumni, trustees, as well as specific groups outside the academic community, should be considered. It is essential to know not only how important goals are presently, but also how important these groups think they should be.

To obtain these opinions, a procedure is needed that avoids face-to-face confrontation which, in too many instances, may result in a hasty formulation of preconceived notions, an inclination to close one's mind to novel ideas, a tendency to defend a previously taken stand, and/or a tendency to be influenced by persuasively stated opinions of others. A technique is needed that will permit controlled interaction among participants in order that they may have the time necessary to consider independently the opinions of others and, on the basis of this consideration, develop what may be called an informed opinion. A procedure originally developed by the RAND Corporation for obtaining greater consensus of opinion among experts on urgent defense problems (and referred to as the Delphi technique) seemed to meet the above criteria and was employed in this study.[1]

In the Delphi technique experts are consulted individually, usually by questionnaire, in several different sessions, for the purpose of progressively eliciting more carefully considered group opinions. Although there are variations, the general procedure is as follows: (1) The experts are asked to list their opinions on a specific topic, such as scientific predictions or recommended activities; (2) the experts are then asked to evaluate the total list by a criterion, such as importance, chance of success, etc.; (3) each expert receives the list and a summary of responses to the items and, if in the minority, is asked to revise his opinion or indicate his reason for remaining in the minority; and (4) each expert again receives the list, an updated summary, minority opinions, and a final chance to revise his opinions.

Since the philosophical and methodological considerations related to this technique are to be covered in another paper in this volume (see Ducanis), these points will be omitted here except as they apply to the specific study described.

In this study, the Delphi technique was thought of primarily as a tool for communication and secondarily as a means for obtaining convergence of opinion. It is likely that with certain more general goals convergence of opinion with regard to the importance of the goal might be obtained; however, it is less probable that convergence could be obtained with goals that are more commonly associated with a specific division of the institution. However, any convergence of opinion would certainly be helpful in decision-making and knowledge of reasons for disagreement can be extremely valuable.

Of course, in order to apply this technique, an instrument is needed that would not only measure the importance of different goals as perceived by different groups, but which could also be used at different types of institutions. Unfortunately, most of the studies examining goals have been aimed at a specific type of institution (e.g., universities only) and/or specific types of respondents (e.g., deans only).

The Study

With the exception of the development of a goals inventory, this study was proposed by Educational Testing Service (ETS) to the Regional Education Laboratory for the Carolinas and Virginia (RELCV) for possible funding, since it would fit into their Administrative-Organization System. They agreed to subcontract the study to ETS and the project started this past November. There were several purposes for the study: (1) To investigate in a small number of institutions with differing characteristics, what on-campus and off-campus groups perceive the goals of their institution to be, as well as what they should be; (2) to evaluate the procedure itself in terms of its worth as a measure of opinion convergence; (3) to provide participating institutions with the results of the study for their own purposes of self-evaluation; (4) to provide information which would be helpful to RELCV in revising and augmenting the RELCV Administrative-Organizational System model. This study will be completed by the end of this coming November.

To clarify the application of the Delphi technique in this study, a brief description of the institutions and of the different groups involved, as well as of the instruments used, will be given.

Five institutions were selected by ETS and RELCV from the area of the Carolinas and Virginia to represent a spread on the following dimensions: Public vs. private, college vs. university, and predominantly black vs. predominantly white. The participating institutions are: Furman University, Lynchburg College, North Carolina Central University, North Carolina State University, and Old Dominion University.

Representatives of the following on-campus and off-campus groups were included: Undergraduate students, graduate students (when applicable) and faculty selected to represent different departments, administrators, trustees, alumni, local political groups, community leaders, occupational groups, religious groups and minority racial ethnic groups.

The goal instrument was developed by an ETS committee chaired by the author. Several consultants representing different areas of higher education assisted this committee. This was a separate ETS project and was a result of ETS's continuing developmental work towards an Institutional Goals Inventory.

The items were developed from a review of empirical studies such as Gross and Grambsch (1968),[2] Sieber et al (1968),[3] Danforth Foundation (1969),[4] etc. and statements by activists and minority groups, and key "personal declarations" about purposes in higher education – such as presented by Dobbins and Lee (1968).[5] Also, recent statements of higher education goals by boards of higher education, inter-university groups, and social philosophers were studied in an attempt to cover societal goals that institutions might well aspire to, even though not seeking them presently. For each goal statement, the respondent checked the degree of importance for the institution on a five point scale ("of extremely high importance", "of high importance", "of medium importance", "of low importance", "of no importance"). All groups responded to the goal statements both in terms of perceived existing goals and in terms of beliefs about what the institution's aims ought to be.

On-campus groups responded with reference to their institution, while off-campus groups responded with reference to the local institution being rated. An item asking each respondent to rate his degree of familiarity with the institution was included.

Items were selected to represent specific areas. The areas are as follows: Intellectual development of the student, personal development of the student, vocational preparation, religious orientation, training of graduate and professional students, research, local and regional service, national and international service, social criticism, freedom, innovation, governance, self-study and planning, egalitarianism, esprit and quality of life, concern for projecting good image, financial soundness, and non-academic activities. Six additional items were included which could not readily be classified under any of the above areas making a total of 105 items.

The directions for completing the instrument and providing feedback to the participants were modified to meet the specific objectives of each administration of the questionnaire.

As stated previously, the general procedure for the Delphi technique is as follows: (1) The participants are asked to list their opinions on a specific topic, such as scientific predictions or recommended activities? (2) the participants are then asked to evaluate the total list by a criterion, such as importance, chance of success, etc.; (3) each participant receives the list and a summary of responses to the items and, if in the minority, is asked to revise his opinion or indicate his reason for remaining in the minority; and (4) each participant again receives the list, an updated summary, minority opinions, and final chance to revise his opinions.

In this study, step 1 was omitted; the participants were not asked to list their opinions as to what goal statements should be included in the study. Instead, the preliminary form of the Institutional Goals Inventory, previously described, was used. With almost 1,000 participants, step 1 was considered impractical. Step 2 was completed by asking each participant to check the degree of importance of each goal statement both in terms of perceived **existing goals** (How important is the goal at this institution at the present time? Consider the institution as a whole in making your judgment.) and in terms of beliefs about what the institution's goals **ought to be** (In your judgment, how important **should** the goal **be** at this institution?). Space for comments was provided for each goal statement in order that a participant who was having difficulty with a particular statement could make the problem known to the researcher. In addition, space was provided at the end of the instrument for any participant to add and rate goals which he felt had not been covered. Approximately 1,000 of the first questionnaires were sent to members of the different groups described earlier. Eighty-five percent of the questionnaires were returned completed. The percent return by institution ranged from 78 percent to 92 percent. The results from each institution were analyzed separately to determine the two modal responses per goal statement, one for the "is" rating, the other for the "should be" rating. These modal responses were used in the third step of the Delphi technique.

According to the third step of the general Delphi procedure each participant receives the list of items and a summary of responses to the items and, if in the minority, is asked to revise his opinion or indicate his reason for remaining in the minority. With one modification, this was the objective of the second questionnaire. The second questionnaire was similar to the first except that the response block associated with the modal category of importance was circuled in red. If the number of responses to another category of importance did not differ by more than 10 percent from the number of responses to the modal category, that category was also circled in red. However, in contrast to the normal Delphi procedure, the participant's previous response was not indicated. Emphasizing a participant's previous response, especially when it differed from the most frequent response, could make some participants defensive. It was the author's opinion that a person should not have to defend a position unless he felt strongly about it. Thus, the instructions to participants indicated that they were not to be concerned with the responses they made to the previous questionnaire. They were given an indication of how others responded and, if the category they now selected differed from the most frequently selected category, they were to indicate, if possible, one or two important reasons for their choice. These questionnaires were sent to the same people who received the first questionnaire. Eighty percent were completed and returned. For each institution and each item the modal responses were again calculated as described for the results from the first questionnaire. In addition, for each institution reasons indicating a degree of importance different from the modal response were summarized. These reasons were not only summarized for each "is" and "should be" statement, but also by the categories "more important than most frequent response" and "less important than most frequent response". These modal responses and summaries of minority views were used in the fourth step of the Delphi technique.

In the fourth step of the Delphi procedure, each participant should again receive the list of items, an updated summary of minority opinions, and a final chance to revise his opinions. This was the objective of the third questionnaire. The modal responses were circled in red as in the second questionnaire. In addition, accompanying each questionnaire was a separate summary of minority opinions for the specific institution. These were prepared to line up readily with the appropriate goal statement. Only minority opinions cited by at least two people were included in this summary. After reading the goal statement the participant was to notice the most frequently checked category of importance (circled in red), and then read the reasons why some people thought the goal more important and why some thought it less important. After considering these reasons, he was to indicate his opinion by checking one of the categories of importance. For example, a participant was asked to read a goal statement such as "to help formulate programs in a number of public policy areas such as pollution control, urban renewal, and health care". He would notice that "of low importance" had been the most frequently chosen category to represent how important the goal presently is. He would also read that some participants had thought it should be rated of greater importance because "it was being done in some curricula, for example, environment and conservation curricula". Participants who had thought it should be rated of lesser importance than the most frequent response gave as their reason, "very little was being done in this area". After noting the most frequently selected category and reading the minority views of both sides, the participant indicated his opinion by checking one of the categories. The third questionnaire was mailed in the beginning of May and 62 percent of the questionnaires have been returned one week later. Therefore it is not unrealistic to believe that at least 75 percent will be returned.

The above describes how this study employed the procedures of the Delphi technique to help identify an institution's goals. An additional step was included in the study which was not part of the Delphi technique. On the last questionnaire participants were asked to indicate on a high-low priority continuum those goal statements which they had indicated **should be** "of extremely high importance". The object of this step is to provide better discrimination among those goals. These goals are of considerable importance and other researchers (e.g., Gross and Grambsch) have found that the standard Likert scale does not always provide adequate discrimination in this most important category.

The technique could be considered successful from at least two viewpoints. The percent of completed questionnaires was very impressive and the number of types of comments made indicated very high interest on the part of the participants.

The results of using the Delphi technique in the manner described can be of significant value to an institution. For example, with the administration and feedback process repeated several times, the president can observe what changes in opinion are taking place per goal statement and identify the major reasons for minority positions. While the individual respondents should remain anonymous, each group can be coded so that the president might identify those groups who strongly support a goal and those who do not, and the reasons for the minority opinions. This would not only be useful to the president, but it would provide each group with a better understanding of the perceptions of other groups who are also concerned with the institution.

By having each participant also respond as to how important each goal **should be**, the president obtains the same information about what these different groups desire; by comparing the "are" and "should be" responses he can identify dissatisfactions of various groups. Thus, when he does need to confront a group, he knows a great deal about what they feel are important goals, where they differ from the majority and why, and which goals they perceive as deviating most from their desires.

The technique also may be of value in several other ways. For example, what better way is available for a new, high level administrator to become quickly familiar with the perceptions and thinking of different groups with which he will be working? In an afternoon, he can obtain insight into the interrelationships of groups within his institution by reviewing the results of several administrations of the questionnaire. Instead of taking several weeks or months feeling his way, a profile of each group in terms of importance of goals is immediately available to him. Thus, this technique could provide an important tool in the training of administrators.

One word of caution – it is important not to apply a technique blindly because it has worked in another area. The Delphi technique has specific advantages for improving communication within higher education institutions. For example, it eliminates the problems of face-to-face confrontations and the amount of time required is small compared to the number of committee meetings to achieve the same purpose. However, certain modifications were desirable to make the technique most useful in the present situation. It is likely that most situations will not adapt themselves to an unmodified application of the Delphi technique. Methodological studies of different phases of the technique will provide a better understanding of the modifications necessary for different applications in higher education.

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COMMUNICATING THE RESULTS OF INSTITUTIONAL RESEARCH: THE PRODUCTION AND USES OF THE FACT BOOK

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Administration of educational institutions is an extremely complex process. Effective university management dictates the existence of more relevant information, and certainly information organized in such a manner so as to assist in the complex tasks of institutional planning, projecting, and decision-making. College administrators must have relevant information fast. They generally know the kinds of information they want if they can only have it available in usable form when they need it. Tomorrow, next week, next month will probably be too late. A major responsibility of the institutional researcher is to anticipate the management data needs, then routinely (utilizing the computer and other tools available) generate them. Generally, it is accurate to report that the management problem today is not so much one of a lack of data. With the creation and widespread use of the computer, vast amounts of data may be rapidly handled. In fact, the computer can produce data far more rapidly and in far greater volumes than most college administrators are capable of assimilating, absorbing and utilizing. The institutional researcher must perform the service of assuring that consistent data are produced routinely and that they are abstracted, organized, and communicated in convenient and usable form.

You all know of the kinds of basic institutional data which form the infrastructure of management decisions. These might include enrollment data broken down by departments, sex, part- or full-time status; data by student levels; data which are consistent from term-to-term and year-to-year. These might include faculty data relating characteristics of sex, age, length of service, distribution by rank, tenure, and educational level. Or this might consist of data relating to faculty productivity, cost of instruction, retention rates, or alumni characteristics. Whatever the data items, it is imperative that they be amassed consistently from year to year.

In addition to providing data requested by the decision-making administrators, the institutional researcher, out of curiosity or necessity, is constantly assembling, analyzing, and disseminating information about the institution in which he works and to some limited degree about all of higher education. He is constantly making comparisons of local conditions to normative data on the state, regional, or national scene. Also, most institutional research offices are alike in that all the insipid and hard to satisfy data requests and questionnaires are referred there for completion. It may take a few minutes, an hour, a day, or perhaps even several days to pull together an adequate response to a legitimate request for data about some facet of the institution or institutional operations. Usually there will be readily available only a portion of the information requested and assistance will be needed in assembling the remainder. At any rate, the request has arrived and becomes the impetus for forcing the development of a technique for amassing the data. The data are produced, the request is satisfied, and a copy of the information is filed in the institutional research office. There are two important matters worthy of mention here. First, in the case of most new items of information generated, it is usually the initial request which is hardest to satisfy. That is, once the computer program has been developed, most subsequent data requests can be generated rather routinely. But to simply accumulate routinely great masses of data is a rather useless endeavor unless there is some plan for utilizing the data. A second point relates to the filed copy of the requested data. There are in files all over every campus bits and pieces of information about the various aspects of the institution. If the energy is to be expended to develop the data about the institution, then as many uses as possible should be made of the data. It is only natural that information which is readily available is going to be used more than that which is heaped obscurely in the files. Furthermore, as the number of requests for specific items of data increases, the institutional researcher could conceivably spend greater portions of his time and energy retrieving and sorting from the files information items.

As a result of the rapid growth and increasingly sudden change in the entire educational enterprise, the increased interest by the many educational agencies, and of course the widespread use of the computer as a tool to create with ease and speed more accurate information about the various components of education, it is natural that the fact book has appeared on the education horizon. The American Council on Education publishes, "A Fact Book on Higher Education". The U.S. Office of Education produces an annual "Digest of Educational Statistics." Regional educational agencies, such as the Southern Regional Educational Board, are creating books of regional facts. Several of the state coordinating bodies compile and release educational statistics on a statewide or systemwide basis. Colleges and universities have recently begun to utilize this approach for keeping the data current and available. College and university administrators are required to know more about all parts of the institution and to know how the various parts interface. They are more than ever before required to have readily available more data about all facets of the institution. In short, in response to the need for organized and continuing self analysis, higher education institutions created offices of institutional research. In response to mounting pressure for consistent data to satisfy the increasing number of legitimate consumers of such information, a vehicle for conveying and communicating the data has emerged. That vehicle is the fact book in higher education.

There are certain basic considerations involved in the development of a fact book. Assume that the decision has been made to compile and publish a fact book at your institution. What are the underlying considerations which must be resolved?

1. Early in the development process the decision must be made relating to the degree to which the publication is to be distributed, and thereby, the nature of the data to be

included. Perhaps this should not be the case, however, there exists information relative to most institutions which administrators would prefer not to circulate widely. If it is the plan to produce only a dozen or fifteen copies – for use by key campus administrators – content would in all likelihood be different from that planned for widespread distribution of several thousand volumes.

Normally, criteria used in determining to whom the fact book would be sent are: Does this individual, or these persons, have occasion to use the data found here? Do they have a legitimate interest? Distribution is usually made on campus to the following:

1. Central Administration Officers
2. Deans, Directors, Departments
3. Faculty, upon request only

Off-campus recipients include:

1. The members of the board of trustees
2. State legislators
3. Other state officials
4. Presidents of other state-supported institutions
5. Alumni leaders
6. News media
7. Others interested in the institution

2. To a large degree, the institutional research budget will dictate the copy process to be used: Mimeograph, photo-offset copy, typeset. If the publication is distributed to state legislators, influential alumni, and news media personnel, then eye appeal is a serious consideration and quality, in light of public relations value, is, of course, a factor.

3. Related to the above is the type of binding to use. Some institutions utilize a "loose leaf" technique which permits continual updating and probably permits some long term economizing. Others have continued to use the bound volume approach. There are merits and limitations in the use of either alternative. This consideration also relates to the frequency with which the fact book is to be updated and reissued. Ideally, of course, to guarantee currency of data the fact book would be issued annually; some institutions reissue biennially. While it is recognized that some of the data become old, others have continual value or do not radically change. The American Council on Education originally produced a loose leaf fact book with periodic updating. This organization has recently begun to produce bound volumes by subject area. Updated volumes are released annually.

4. Cost per volume will be dependent upon a lot of other decisions which are made. Cost, of course, will also relate to the extent of distribution, copy process used, binding, color, content and size.

5. There is also the matter of who is to be responsible or who will be given time for keeping current the data included in the fact book. Assume that a fact book was distributed last year. Some recipient, upon examining his copy this year would perhaps desire more current information. He will call the office of institutional research seeking more recent data, and someone in the office should be in position to reply to this request.

This suggests two points which require emphasis. First, the development, maintenance, and release of a fact book is a continual process. The value of most data are enhanced with continuity over a period of time. This is especially true of trend data where the goal is to look at changing enrollment patterns, changing financial conditions, source of students, quality of students, cost of instruction, faculty salaries, and so forth. An example may be pertinent here. Suppose an instution discovers that 46 percent of the teaching faculty hold the doctorate. Standing alone this piece of information has limited value. This fact carries more meaning when it is known that nationally the percentage of teaching faculty holding the doctorate is 54 percent, and regionally the statistic is perhaps 50 percent. For effective internal institutional management it is necessary to know specifically what has been happening at this institution over recent years. In short, to be really useful one should guarantee that data have **consistency** and **continuity** over a period of time. Therefore, someone should be responsible for routinely assuring that data to be included in the fact book are always current, and the office of institutional research is the logical point of control.

A second related point has to do with making your fact book more lasting or current. There should be in existence always an up-to-date version. When those who use the data in the fact book know this, they will not hesitate to call for current information. If Table 21, for example, contains data on faculty salaries, and if some time has elapsed since the last edition of the fact book was released, then someone should be maintaining a current Table 21 – keeping it ready so that responses may be made immediately to simple requests.

6. What should be included in the fact book? Mentioned earlier was the decision about who was to receive the fact book. There are certain kinds of information and data which you and administrators in your institution may choose to distribute on a very limited basis (if at all). If the distribution is rather widespread, some interesting and important facts about your institution of necessity may need to be excluded.

Most fact books are built around those items of information which were most frequently requested by agencies and individuals both on and off campus. These generally relate to:

a. **Enrollment data:**
   Current as compared to some previous year
   By various schools or academic programs and levels
   For the graduate school
   Projections for future years
   Sources of students – country, state, county
   For short courses

b. **Characteristics of the student body:**
   Married students
   Fraternity-sorority membership
   Place of residency
   Whether they register automobiles
   Grades earned
   Test score information
   Costs
   Scholarship and other financial aid information
   Degrees awarded by level, etc.

c. **Faculty information:**
   Distribution by rank
   Sex
   Age
   Salary
   Length of service
   Education levels

d. **The research program:**
   - Volume
   - Programs
   - Sources of funds
   - Growth over the years

e. **Budgetary information:**
   - Sources of funds
   - Expenditures
   - Cost of programs

f. **Physical plant:**
   - Size of plant
   - Cost of building program
   - Capacity
   - Increase in facilities

g. **A general information section:**
   - Historical data on the institution
   - Accreditation of programs
   - Outstanding historical events
   - Former presidents
   - Dates of establishment of specific programs
   - Honorary degrees awarded
   - Major facilities
   - Administrative officers
   - Organizational chart

7. Where do the data come from? Naturally, the sources of various items of data included in the fact book are dependent upon the specific item of data under consideration. That is, the office of institutional research generally receives routinely enrollment and graduation data from the registrar's office. Financial data are, of course, generated in the business office. Data on faculty come from the business office and the personnel office. Test data on students are received from the admissions office. This diversity of data location found on most campuses reemphasizes the need for some agency to be responsible for assuring that comparable data are routinely generated. What is everyone's responsibility becomes no one's responsibility.

8. Like most publications, this one would serve to benefit the institution. In addition to university administrators having readily available a handy reference manual containing general information, the publication might be used in the following fashion:

a. Agencies from whom the institution is seeking outside support inquire about various components of the institution. This publication makes it possible to present a good general background about the institution.

b. Evaluation teams and visiting consultants seek information of the type contained in the publication.

c. The publication is used in recruiting of deans, department heads, and other administrative officials.

d. The publication serves usefully as a public relations vehicle. Even persons who do not particularly use the information in day-to-day activity are impressed that there exists conveniently in one reference volume all of this information.

e. The publication provides a framework into which a multitude of diverse information may be organized. In short, there exists much useful data in the files of offices on our campus. When a scheme for summarizing and presenting these is developed, it makes for easier utilization of information.

f. College administrators are incessantly bombarded with great volumes of information. The publication forces a stripping effort, separating that which has frequent and general use from that which has limited value.

There are obvious merits in the development of a fact book. It forces the institutional researcher to concentrate into one publication the results of much of his efforts, potentially increasing the value of and making more lasting the fruits of his endeavor. Trend data need to be assembled consistently over long periods of time. The existence of a fact book has the tendency to assure that embarrassing and unnecessary gaps in data do not exist. With a book of current facts on the various components of the institution, users of the data will have needed information readily at hand, eliminating many of the routine requests which otherwise arise. Similarly, a secretary can often respond to the routine requests which do arise. The fact book is an avenue through which it is possible to accumulate and communicate many useful items of information which already exist, but at diverse locations on campus. Many of the studies conducted in the office of institutional research are reported verbally, in questionnaires, letters, memoranda, or brief report form. The data which are produced by such studies have widespread interest and value. The fact book conveys the information to many who would not otherwise have access to it. It is an effective vehicle through which to communicate information about institutional operations to those who need or want the data. In no other document does there exist such an assortment of accurate and current information.

The fact book has really as many uses as staff, resources, creativeness and ingenuity will permit. The real task in compiling a fact book is the initial effort. Someone must make many basic decisions about what to include, and where to get the information. To be decided also, is how much historical type data to include (although frequently this decision will be made for you by the availability – or lack thereof – of continuous data) and what data to release.

After the initial version, many suggestions for improvement will be forthcoming, and future editions will generally be restricted to minor revisions and updating. This can be done simultaneously with the other tasks performed by the office.

University administrators are in a precarious position today. They are pelted by pressures from every quarter. They do not have the time to wade through and absorb the great volumes of data which the management information people are capable of producing. It is requisite that the institutional researcher develop the technique for communicating the pertinent and salient information to those in position to use it. The fact book can help to do this.

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THE SMALL COLLEGE ADMINISTRATOR LOOKS AT INSTITUTIONAL RESEARCH: HIGHLIGHTS OF A SURVEY

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Can IR help to solve the problems of college administrators? Is it a management tool attractive to the average college administrator? Not by itself, according to a survey of acceptance of IR among small college administrators.

Instead, the typical college administrator tends to prefer the cracker-barrel approach to decision-making. He is satisfied that things are going well in his college, and that on his own he possesses adequate information to run his office. His chief source of information is personal contact with other administrators.

In short, the college administrators' self-satisfaction probably controls acceptance of IR as a management style more than the inherent value of IR and more than the campus conditions crying loudly for attention.

Sample

The study constructed a purposive sample of typical colleges and their chief administrators. Fifty-one colleges were chosen – all of the regionally accredited small colleges in the state of Indiana, and for comparative purposes, in a geographic area surrounding Indiana in the states of Illinois, Michigan and Ohio. A survey instrument was pre-tested and refined, and sent by mail to 306 administrators in the top 9 positions in each of the 51 colleges: President, vice president, chief academic officer, chief financial officer, chief student personnel officer, registrar, admissions officer, development officer, and director of institutional research. After two follow-ups – one by mail and one by personal interview – a 60 per cent return was achieved. By comparisons based on more than 20 items of census data obtained from published sources, non-respondents were found not different from respondents at the usual levels of statistical significance.

Design and Overview

This study attempted first of all to find, through literature and observation, the variables which define IR as practiced today. The study also established a systemic model of the college organization. This model was intended to act as a fully adequate framework to study the influence of IR on the college and the counter-influence exerted by the college on IR. But a pioneering empiric study could not use such a model in its entirety. Too little research has been done on IR as a variable, on the college organization, and on college administrators.

Instead of strict hypotheses, therefore, certain propositions were established for testing through survey research. The first proposition asserted that administrators in the typical college would be favorable to IR both in theory and in operation. In general, the study found college administrators favorable toward IR in theory, but not in according it operational status, except for the majority of vice presidents and registrars, who appeared as the officers most engaged in actual performance of IR. Academic and particularly financial officers emerged as characteristically unfavorable.

A second proposition asserted that administrators in the typical college would be sensitive to those campus constraints which organizational scientists have hypothesized as stimulating the appeal to research for administration – in other words, what might be called IR predictors. The study employed these predictors: Use of information, administrative and research expertise, knowledge limits, information limits, degree of influence, dissatisfactions about agreement and coordination among administrators, about position and authority, about chance for initiative, about communication, about finances and time, about administrative style, and about the degree of change in the colleges. On each count, college administrators generally gave themselves and their schools good marks with the exception of available time. They were pollyannish, to say the least. The administrators in the study were generally not aware of campus constraints which might elicit an appeal to research.

A third proposition supposed that positive relations would exist between the awareness of predictors and favorable attitudes toward IR. This proposition proved useless because of the general absence of awareness and of favorable attitudes. Even among the few respondents disaffected with campus conditions, no pattern appeared which would link them to the group of respondents expressing favorable attitudes toward IR.

Highlights

This brief summary perforce omits many aspects of the study. Instead the most interesting highlights were administrators' perceptions of IR, the information sources used by administrators, patterns of influence, and administrators' self-image.

Perceptions of IR

Thirty-two items constituted the core of the questionnaire instrument. Most of these items were statements. A respondent reacted to each statement by checking the degree to which it reflected his own thought and feelings. All responses were collapsed into a uniform 7-point (0-6) scale of agreement. Mean response on this scale is the basic tool of analysis used in this report (see Table 1).

The 32 items contained four types of statements. Those concerned with theoretic concepts about IR in general and those concerned with operational concepts of IR involved degree of acceptance accorded to IR whether in theory or in practice. A third set of items involved administrators' awareness of those campus constraints hypothesized as IR predictors, that is research-stimuli. A fourth set of items involved use of information and data. For all 32 items, mean-agreement on the 7-point scale was 3.50.

Six statements concerned the theoretical connection between Institutional Research and college administration. These theoretic items fared well, and each ranked above the mean for all items.

The top ranked item for the entire study involved the connection between IR and decision-makers, that is, "research only presents alternatives; **administrators** make the decisions". The mean response for this top-ranked item was 4.91, or very strong agreement. This result emphasizes a problem faced by many institutional researchers – just what force is exerted by more and better information? Administrators apparently did not think that a cause-effect relation exists between research and their own activity in decision making.

The second theoretic concept ranked sixth overall with a mean of 4.38. Administrators had experienced a connection between thorough investigation and their own best decisions.

The statement "systematic research is an integral part of the administrative process" ranked ninth among all 32 statements with a response of 4.15. A fourth theoretic statement said, "this school should require systematic research before important decisions". The statement ranked tenth with a response of 4.03. Another theoretic statement ranked twelfth at 3.80, that is: "Research must constitute an essential factor in my administrative plans". The final statement concerned regular research one might do in pursuit of his work. This ranked only eighteenth, slightly above the mean for all statements.

The college administrators in the sample were apparently quite receptive to the idea of Institutional Research at an abstract level, even when applied to themselves and to their schools. Other results in the study showed that administrators could indeed conceive of ideal purposes for using IR, but only for general administration and for curriculum questions. For their own work, however, they preferred research to answer immediate problems.

Five statements concerned critical aspects of operational IR or the status accorded to official institutional research by college administrators. Every operational concept fell well below the mean for all items, that is, was rejected by the administrators in the sample.

One item held that an IR office should be represented – merely represented – on the highest level of administration. This ranked twenty-fourth with a weak mean agreement of 2.88. That administrative research should be done by specialists ranked twenty-fifth at 2.82.

Third, the administrators rejected the need for an IR office. Mean agreement was 2.60 and the relevant item ranked twenty-sixth. Consequently an IR office should **not** participate – again merely participate – in policy-making. The rank for this item was a mere twenty-eighth out of the 32 statements. And the agreement, 2.41, fell more than one sigma below the mean of means.

Finally, the expert-threat was apparently not a factor in rejection of operational IR. The administrators did not agree (rank 30, Mean 2.24) to the proposition that they feel experts are biased.

In short, the administrators saw a need for IR, but not for an IR office. They would not accord stature to such an office. Many a struggling IR man already knows this. But why is it so? Perhaps because administrators tend to go-it-alone, trust their own lights, and give themselves credit for being able to research their own information.

Again, many a struggling IR man would devoutly wish that studies were being done in and by the various administrative offices – where the rubber meets the road. Presently we shall see that this is not the case, that administrators are not stimulated to perform research, that the information they consider adequate arises from sources other than research, and that consequently the needs for real research are not perceived by administrators.

For instance, among the 32 statements, a third set concerned awareness of campus constraints or of research predictors. The study proposed seventeen such predictors in seventeen statements.

Results showed that administrators in the sample were not cognizant of such restraints. Instead they were quite satisfied with the elements in their environment which might have stimulated the appeal to research, namely: Their chance to innovate (rank 2, mean 4.68); the authority to do their jobs (rank 3, mean 4.58); changes made (rank 5, mean 4.50); changes planned (rank 6, mean 4.40); their chance to influence policy (rank 7, mean 4.37); and their ability to communicate to other administrators (rank 8, mean 4.31). The respective statements for these six predictors elicited responses which fell more than one sigma above the mean for all statements.

Reactions to statements about six other predictors fell above the mean: Satisfaction with coordination (3.90), possession of needed information for decisions (3.78), change-readiness in the school (3.70), satisfaction in present position (3.68), extent of information usage by other offices (3.61), and satisfaction with financial resources (3.56).

The remaining five statements about constraints fell below the mean of means. Thus, the administrators did **not** agree that either their schools (3.44) or their offices (3.42) needed further innovation; or that more policies (2.59) were needed in their schools.

The single dissatisfaction found in the study involved adequacy of time for making decisions. At a rank of 29 and a response of 2.38, administrators rejected the notion that they "get enough time to prepare for decisions adequately". This perhaps marked the unrealistic attitudes of administrators since time by itself is not a cause of difficulty.

Finally the greatest disagreement (1.61) in the entire study occurred on the statement, "I know little of what is really going on in this school". Almost to a man, the administrators gave themselves high marks for knowledge.

Information Sources

They thought, however, that their most useful sources of information were people, particularly other administrators in their own colleges. Respondents were asked to measure by a 7-point scale (0-6) the extent to which they used each of eleven sources of information about higher education and their work. The study again analyzed scales of agreement basically by comparing the mean of responses for each information source (see Table 2).

Three "people" categories ranked above the one sigma level for means, namely: other administrators in your school (4.00), professional meetings (3.94), and professional colleagues (3.77). In other words, the college administrators talked to one another, and valued these conversations above all else as sources of needed information.

Only a little better than half of the respondents (53 per cent) claimed to have had some formal or informal training relevant to their respective administrative positions. For these respondents, this training emerged as fourth most useful source of information (3.76) – perhaps an argument for increased training in college administration.

Journal reading ranked fifth and sixth, professional journals at 3.59 and journals on higher education at 3.27, slightly below the mean of means for the eleven items.

The reading of books on higher education ranked last (2.58) among the eleven information sources.

Otherwise the four research sources were least used: reports of research on higher education in general (3.23), research done in one's own office (3.13), self-study in one's own college (3.10), and reports of research done in other campus offices (2.87). The mean of all research sources fell more than one sigma below the mean of means. In sum, the administrators did not value institutional research as a source of useful information in carrying out their duties. Indeed, research fared poorly by comparison with people-sources.

It was perhaps important, nevertheless, that personal research done in one's own office ranked high among research sources. This finding coincided with other results in the study, namely, that administrators preferred doing their own studies to having a formal IR office, although few respondents could mention more than one study actually performed. It was found that registrars and vice presidents were those most engaged in doing studies – and, by the way, most favorable toward IR. They mainly accounted for the finding (see Table 1) that respondents claimed to be collecting data (3.48, rank 19) and denied that data was hardly used. (1.77).

Influence

The study examined influences from several angles. One involved the relative weight exerted on one's own goals and objectives by 16 categories of persons and groups both inside and outside the colleges. Again the study did a basic analysis of results using means of responses tallied along a 7-point scale of agreement (see Table 3).

The telling point for this study was that IR agents (where extant, that is, in nine of the 51 schools) ranked a mere 14th in influence at a mean of 1.76. IR agents barely outranked church officials (1.55).

They barely outranked the category of donors, foundations and government. This category ranked sixteenth and last, even though some authors have ascribed great weight to these outside factors in influencing the trend toward IR in colleges. Such influence has also been ascribed to regents; but administrators rated them only eighth at 2.77 – below the mean for all items.

At the opposite pole, administrators ranked themselves first in influence on their own work and objectives. The mean was a very high 4.68, well above the second-ranking category, the college president (4.07). Focus on personal work was apparently more important to respondents than any other factor in the college.

College regulations ranked third in influence (3.60), prior to chief academic officers (3.43), and vice presidents (3.22). Respondents thus appeared to put regulations above everything, except their own influence and that of the president. Following regulations preceded the academic in influence, that is, the chief academic officer and the faculty. The latter ranked only sixth (3.12) but did outrank all other influences.

These other influences mainly consisted of the remaining administrative officers, except for the influence exerted by students which, perhaps surprisingly, ranked above (2.58) that of key administrators: student personnel officers (2.45), admissions officers (2.24), development officers (2.20), registrars (2.13) and IR agents (1.76).

Registrars and IR agents, the administrators found to be most favorable toward and active in IR, were accorded least influence of all persons and groups within the college.

Conclusion: Administrators' Self-Image

The survey used in this study discovered in the small colleges what observation had found about IR generally as it exists in fact, i.e., IR exhibited diverse characteristics and was subject to organizational behavior. Consequently, it was difficult to locate and identify, and its function in administration was not easy to determine.

Moreover, the hope for IR in the future probably will rest more on the attitudes and competencies of administrators than on predicted factors pertaining to institutional press. This is probably accounted for by the peculiar self-image typical of the college administrator. He perceives himself as competent, as possessing highly adequate knowledge of his institution and work, and adequate information for the decisions he makes. He attributes the same to his colleagues. He identifies with an academic field and thinks he is current in it. He is self-directed and satisfied in his work, his position, and his opportunity to make plans and changes. He thinks of his institution in the same way. He usually feels he has been adequately trained for his position and relies on this training. He feels adequate in communicating with his compeers, feels they are in great agreement, that their work is coordinated, and that he can rely mainly on them for information. He is not generally dissatisfied with the financial resources available to do the things he plans. He is aware of only one constraint, sufficient time to make decisions.

He is not threatened by the knowledge expert, but sees no need to have researchers or an official IR office in his school. He feels he himself can do whatever research needs to be done. He has done a good bit of data collection, but only a little research either in connection with his work or in self-study. When he does research, it helps him in decision-making. He is not generally aware of the research being done by other administrators or of the Institutional Research in his college. He is against participation of an IR office in policy making, and strongly agrees that research merely presents alternatives while administrators make the decisions.

The college administrator perceives and assents to an administrative hierarchy in knowledge, influence, authority, and decision making. In operation, this hierarchy is little affected by the internal or external press of the institution, by faculty and students, and not at all by outside publics such as government, donors, foundations, and religious groups.

The college administrator abstractly perceives the connection between research and administration, but more for his college as a whole than for his own work. He can conceive of purposes for using IR but more for current information than for planning and change. He has ideas about studies needed to improve general operations and academic quality. Otherwise research ought to help him solve immediate problems.

Registrars and vice presidents presented the only consistent exceptions to this description. They favored IR but not because of the predictors. Rather, their work involved them in performance of IR. Involvement in Institutional Research, therefore, may be the best predictor of positive acceptance of I.R.

This portrait of the college administrator is accurate to the extent that the data showed respondents agreeing with one another on the average, showed no patterns where disagreement and distribution of opinion occurred, and showed in effect that the typical college administrator is a stimulus-response creature. That is, a study of the data indicated that the opinions of respondents were sincerely recorded, and randomly, or without sub-patterns which contradicted the overall average patterns as portrayed. In other words, persons and groups were not consistent in choosing items indicating acceptance of institutional research; and acceptance was not related to persons or groups which perceived the campus constraints which ought to elicit the appeal to research for administration.

Thus, the stimulus-response creature was not a fit subject for a study of the hypothesized predictor variables which presuppose a rigid model of organizational behavior. The organizational behavior of the typical college administrator apparently fits no rigid model.

To the extent that this picture of the college administrators' self-satisfaction is accurate, the key variables or intervening variables or important organizational factors were not the impersonal processes and traits of organizations, but the attitudes and mentality characteristic of college administrators. Perhaps future studies would do well to focus on the administrators themselves.

TABLE 1

Responses of College Administrators to
Four Types of Statements about IR,
Ranked by Means of Responses

(m_m = 3.50, 2 range – 4.25 – 2.75 on a 7 point scale, 0 – 6)

Rank	Items	M
1.	RESEARCH CAN PRESENT ONLY ALTERNATIVES. IT IS UP TO THE ADMINISTRATORS TO MAKE THE DECISIONS.	4.91
2.	My position – good chance to develop new programs, my area.	4.68
3.	Satisfied, amount of authority to do my job.	4.58
4.	Great change has been made in this school.	4.50
5.	School change has been planned.	4.40
6.	I MAKE MY BEST DECISIONS ONLY AFTER ALL RELEVANT FACTS HAVE BEEN RESEARCHED AND EVALUATED.	4.38
7.	My position – good chance to influence policy in school.	4.37
8.	It is easy for me to get my ideas across to other administrators.	4.31
9.	SYSTEMATIC RESEARCH IS AN INTEGRAL PART OF ADMINISTRATIVE PROCESS.	4.15
10.	THIS SCHOOL SHOULD REQUIRE SYSTEMATIC RESEARCH BEFORE IMPORTANT DECISIONS.	4.03
11.	Smooth coordination exists here.	3.90
12.	RESEARCH MUST CONSTITUTE AN ESSENTIAL FACTOR IN MY ADMINISTRATIVE PLANS.	3.80
13.	I have needed information when I make decisions.	3.78
14.	This school readily assents to change.	3.70
15.	I am completely satisfied in present position.	3.68
16.	Other offices use information for decisions.	3.61
17.	Budget allots enough money to my office for things I want to accomplish.	3.56

TABLE I (Continued)

18.	IN PRINCIPLE, THE THINGS I WANT TO ACCOMPLISH IN MY POSITION REQUIRE REGULAR RESEARCH.	3.54
19.	High office data.	3.48
20.	This school needs some significant changes.	3.44
21.	I want to make significant changes.	3.42
22.	(Mean, use of information sources, general)	3.38
23.	(Mean, use of information sources, research)	3.08
24.	**Research agency should be represented on highest level of Administration.**	2.88
25.	**Intelligent research on administrative problems is a job for experts, like research aides.**	2.82
26.	**Schools likethis one should have an official agency to perform administrative research.**	2.60
27.	We need more policies in this school.	2.59
28.	**An I.R. Office (for schools like this) should participate in all policy-making for the school.**	2.41
29.	I get enough time to prepare for decisions adequately.	2.38
30.	**I usually feel reports of expert consultants are tinged by personal opinion or bias.**	2.24
31.	Office data hardly used.	1.77
32.	I know little of what is really going on in this school.	1.61

Legend: Statements in capital letters – THEORETIC CONCEPTS ABOUT I.R.
Statements in bold type – **Operational concepts about I.R.**
Statements in gothic – Perceptions of campus constraints.
Statements in small case letters – Use of information.

TABLE 2

Extent of College Administrators' Use of 11 Information Sources,
Ranked by Means of Response
(m_m = 3.38, 2 range = 3.70 – 2.95) on 7-point scale, 0 – 6)
with Alternate Display Based on Collapsed Categories

Rank	N	Sources of Information	Mean
1.	179	Other administrators in your school	4.00
2.	180	Professional meetings	3.94
3.	176	Professional colleagues	3.77
4.	94	Training in administration	3.76
5.	175	Professional journals	3.59
6.	178	Journals on Higher Education	3.27
7.	174	Reports on research on Higher Education	3.23
8.	178	Research done in your office	3.13
9.	176	Self-study, your school	3.10
10.	172	Reports, other research in your school	2.87
11.	175	Books on history and theory of Higher Education	2.58

TABLE 2 (Continued)

ALTERNATE DISPLAY (Collapsed Categories)

Rank	Sources of Information	Mean
1.	People	3.90
2.	Training	3.76
3.	Journals	3.39
4.	Research	3.08
5.	Books	2.58

TABLE 3

Extent to which College Administrators Perceive Themselves and Others Exerting Weight on Their Own Work Goals, Ranked by Means of Responses

(m_m = 2.84, 2 range = 3.12 – 2.56) on 7-point scale, 0 – 6)

Rank	Administrators – Others	M
1.	Self	4.68
2.	President	4.07
3.	Regulations	3.60
4.	Chief Academic	3.43
5.	Executive Vice President	3.22
6.	Faculty	3.12
7.	Chief Financial	2.78
8.	Regents	2.77
9.	Students	2.58
10.	Student Personnel	2.45
11.	Admissions	2.24
12.	Development	2.20
13.	Registrar	2.13
14.	IR Agents	1.76
15.	Church Officers	1.55
16.	Donors, Government	1.38

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RESEARCH AND PLANNING VERSUS THE CRISIS-RESPONSE APPROACH TO ADMINISTRATIVE PROBLEM SOLVING

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One of the requisites of this paper was to relate it to "communication between college administrative offices and institutional research and planning". In order to explore such a topic, one generalizes from specific experience, in this case from that found in a relatively small and provincial community college in Oregon. One basic assumption in the analysis that follows is that many of the problems of communication found in this environment resemble those at some of the more formidable and organizationally complex educational institutions across the country. The difference would appear to be chiefly one of scale rather than in basic dynamics. One might even claim for the sake of raising debate that the more provincial perspective of the community college research director towards these problems affords a position of relative objectivity that is often prohibited to those in the mega-educational systems where large scale bureaucratization and over-specialization may tend to preclude a comprehensive approach to administrative problems.

From this comprehensive point of view, the function of the institutional researcher and planner would be to inform and advise those parties within the college charged for making institutional decisions of the consequences of their decisions so that they would know the full impact of what they do not only in immediate terms (that they seem to prefer) but in terms of the total (political, economic, social, etc.) fabric of the institution and primarily in its relationship to long-range institutional objectives or philosophy.

The techniques in carrying out this role are largely classical. In gathering and organizing information, the researcher-planner strives for the objectivity of the scientific method to describe events empirically in a climate where prejudice and intuition is, if not excluded, at least carefully accounted for and controlled. The researcher-planner on one level simply advises those making institutional decisions and helps assess, adjust, or reconsider those decisions in terms of the priorities implied in the philosophy and goals of the institution.

However, as in art, the frontier between design and ultimate figuration is obscure; the back-up research and planning for a decision is a process that is often concurrent with the main feature of the decision itself. Effective research and planning becomes something more than just a formative influence on institutional decision making. (Hence, the organizational position of the researcher-planner is frequently found as a direct appendage of the principal executive office of the institution – usually the president's office).

However, there are several factors that tend to dilute this theoretical function of the role of institutional research and planning. Unfortunately, the philosophy that many institutions appear to aspire to is designed to offend no one and is so generalized and vague as to be practically useless in establishing practical guidelines for the growth and direction of the institution. Such statements as "Our college exists to serve the educational needs of the people" fall into this category. Whose needs? What people? Who defines them? Which needs are justified? How are conflicting needs sorted out and priorities established? etc. Typically, many institutional philosophies offer no clues to suggest answers to these questions. Under this situation, the planner is usually left trying to follow a pragmatic institutional philosophy that emerges by default through practical necessity.

In other cases, an institutional philosophy may contain gross inconsistencies while isolated goals are clearly identified. For example, a college may attempt, in terms of its philosophic guidelines, to become an educational melting pot, making education accessible to everyone and especially to those who ordinarily have not had access to it such as those of lower incomes, of minority backgrounds, or of retired status, etc. These goals are clear enough and set objectives that research and planning can relate to. Yet, within the same philosophical text, another guiding stipulation might state that the college will rely almost exclusively on automobile commuter transportation for physical access to the institution. No consideration is given to the fact that this stipulation would tend to exclude those of lower income, of minority backgrounds, or of retired status, etc. who would find the cost of private automobile commuting prohibitive and thus their educational access denied. (When this kind of institutional inconsistency is related to more emotional issues such as the war in Viet Nam or student housing, the results can be volatile.) It is part of the role of the researcher-planner to point out such inconsistencies in philosophy.

Even when a planner is blessed with a straight-forward, consistent and practical set of institutional goals, these goals may serve only as a facade (since institutional philosophy and planning currently is a fashionable subject among educators) while administrators ignore the goals and pursue their own fragmented methods of problem solving. There are several factors that may help explain this phenomenon. One is that many administrators may be accustomed to dealing with problems in a very personal and almost subjective manner. Indeed, this manner is often defended as the most humanistic approach to problem solving. It probably works well where institutions are small and administrators can literally know personally every individual on campus including their particular positions on routine issues that confront the college. It also works well when it is taken for granted by the college community that individual administrative personalities will unilaterally set the tone and direction of the institution. This manner of approaching problems tends to work around over-all guidelines but has the advantage of being flexible in that it can respond quickly and expediently to particular desires by pressure groups or others who are able to assert themselves in a coercive way. This manner can be described as a kind of crisis-response policy of approaching problems and, judging from the discussions at the recent Association for Institutional Research Forum, it seems to dominate in many of today's institutions. Its objective is to keep things running as smoothly as possible while not provoking or raising issues before they raise themselves. But this is a method that was more appropriate for administration twenty or thirty years ago when, in fact, most instituions were small, campus issues were routine, and no one questioned the decision-making prerogatives of the administration.

Administrators who subscribe to this crisis-response approach often do not understand or are not sympathetic to the comprehensive philosophical guideline approach to problem solving of research and planning. The traditional techniques of planning and research appear to be basically contrary to the crisis-response method. But this contradiction often remains submerged within the everyday routine of running the institution and the researcher-planner can easily find himself in the typical bureaucratic position of furiously turning out reports on everything from faculty loads to construction programs, can be hiring more people to manufacture these reports, can be attending conferences and seminars to improve techniques in report making and may even be congratulated on the volume of work produced and at the same time find that this work is of only casual importance toward influencing decisions that determine the direction of the institution. (Also, many researcher-planners themselves do not subscribe to the comprehensive planning approach to problems and prefer doing research for the sake of research or are not too concerned with its consequences, immediate or long-range).

Current evidence, however, suggests that the pragmatic crisis-response approach to problem solving in higher learning is itself approaching a crisis in alienating students, staff, and patrons. The complexity and scale of today's educational institutions preclude any administration from knowing by direct personal experience and involvement all of the potentially crisis bound sentiments brewing among constituents within the institution. Without this element of personalism, the crisis and response approach becomes dangerously autocratic and isolated from students and faculty, a condition which in itself further precipitates crisis. Further, constituents are becoming more sophisticated in manipulating the crisis-response context of approaching problems. Activists now recognize that due process in resolving alleged inequities within the institution involves forming pressure groups, precipating or threatening confrontation (through any means necessary such as destroying public support, by burning buildings, rioting, etc.) and then successfully negotiating a favorable compromise from a position of strength. This kind of academic brinksmanship is a logical outgrowth of the crisis-response approach to administration and one cannot realistically expect radical constituents to play the game any other way; they simply play it a little more seriously and ruthlessly than most administrators find tasteful. The ultimate breakdown in this approach occurs when there is no way of appeasing opposing pressure groups bent on extreme measures (rioting or withholding operating funds) without resorting to violence (burning buildings or calling in the police) or closing the institution.

There are several approaches the researcher-planner might employ in order to begin to adjust and ultimately replace the crisis-response technique. One is to agitate for the establishment or revitalization of a really operational, consistent, and objective institutional philosophy which can actively be used to measure the validity of day to day decisions in the college. In larger institutions, it may be advantageous to even establish formally a judiciary type of agency independent of the administration that could function to interpret and maintain the applicability of the college's philosophy and goals. Membership in this group (besides the researcher-planner) should include representatives of all constituents of the institution and within certain constraints, should be given the power to veto administrative decisions or to appeal unilaterally for redress to higher groups such as a board of directors. At any rate, the researcher-planner should initiate the development of a nonpragmatic institutional philosophy. Secondly, a sound system of protecting that philosophy from the compromise of the crisis-response policy should also be developed. Without these conditions, an institutional philosophy will risk becoming neither relevant nor respected and may offer no workable protection for either the administration or the constituents of the institution. Without this philosophy, the researcher-planner is left without real objectives and without real objectives planning becomes a charade.

Another suggestion towards realizing a less arbitrary approach to problem solving can be developed in a system of research that is designed to objectively reveal inequities in the institution (typically within such areas as faculty load, budget allocations, etc.) while the policy-making environment is still fluid enough to allow for the resolution of these inequities without the dislocating confrontation that usually occurs after that environment has become rigid through formally ratified decisions or reports. With exhaustive computerized information systems at his disposal, the researcher-planner has never been in a better position for doing this. It should be his responsibility to seek out and challenge those inequities in proposed policies before they are raised as explosive issues after their implementation. This is a major distinction between the symptomatic planning of the crisis-response approach to problem solving and the comprehensive planning of the researcher-planner.

Also, there is often a tacit secrecy in administrative decision making provided by the insulation of bureaucratic structuring surrounding most college agencies. Administrators often are found attempting to protect themselves after they have been contested on an issue by implying that their "door was always open" and it, therefore, was the critic's responsibility for finding out beforehand about the decision currently affecting him. From a comprehensive planner's point of view, the responsibility is just the reverse; to facilitate this, the planner should actively pursue making his more formative research and planning reports accessible to all as a routine matter.

The research and planning office that attempts to plan within the framework of the sentiments outlined above will probably find itself, as suggested earlier, either overtly or covertly in a communications dilemma with those other agencies of the institution who still rely on the older crisis-response methods of administration. And, it will probably take considerable time for the communication dilemma to be resolved in terms favorable to the tenants of comprehensive planning.

In the meantime, an immediate resolution to the larger dilemma – the breakdown of crisis-response administrative techniques – may be thrust upon educational institutions. The nature of this thrust is difficult to chart at this point. One possibility is to break up the larger institutions into smaller units that can be managed by the limited techniques of the crisis-response administrators. This is superficially costly and inefficient but it is already occuring in some secondary school systems. Although highly reactionary, it may prove to be the most palatable solution to the current administrative dilemma. However, another possibility is that the traditionalists seeing their policies attacked from students and faculty below and state legislatures and boards of directors from above will, from a conservative position, resort to repressive patterns of decision making; the immediate success of this policy is doubtful under current activist conditions among students and faculty and may result in the closure or near closure of institutions. However, this policy may ultimately prove successful (if success is gauged by stability and keeping the institution "running smoothly") through factors exterior to the institution such as prolonged economic recession (young faculty tend to rock the boat less when their job options are closed), the development of strong political intimidation on campuses (McCarthyism), or a combination of both.

However, even in the light of these possible developments, the researcher-planner is still in a stragetic, although limited, position to bring educational institutions within a more humanistic management framework. Through providing necessary data about the impact of proposed actions and encouraging the development of planning within long-range goals and philosophy, the researcher-planner can at least partially mitigate the damage to educational values that will occur through the polarization and alienation of students, staff, and patrons resulting from the failures of the crisis-response approach to institutional administration.

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INSTITUTIONAL RESEARCH – BUSINESS OFFICE

John McCarthy
University of Ottawa

Being mainly concerned with financial administration, the business officer is very much involved with all areas of University operations. Areas pertaining to research performed for the Registrar, the Academic Planner, the Physical Plant Planner are all closely interrelated and are the subject of discussion by other panelists. The only comment I wish to make concerning these areas is that all of the decisions that result from such research have a profound effect on financial planning and cannot be overlooked by the business officer. I shall restrict my comments to the planning of operating expenditures and the reporting of these expenditures. I am purposely avoiding income planning due to the different methods used by governments to evaluate needs and to provide grants for operating purposes. In Ontario it is a relatively easy matter to estimate levels of operating income from enrollment forecasts due to the particular formula arrangement that exists. In other jurisdictions, where a budget review process is used, income estimating may be a much more difficult task.

It is in the area of planning expenditures that the fun begins. The total operating income pie has to be allocated in an equitable manner among each of the Departments, Faculties, Schools and Services and we know to begin with that available resources cannot possibly meet the costs of all aspirations. It is in this area that the institutional researcher can be of most value to the business officer. The institution must be subjected to a very critical self-examination to determine where it has been and where it is going.

I am very much aware of the need for planning expenditures and of associating these expenditures with the functions they serve. In other words the association of expenditures with programs. One of my main concerns, however, is that we proceed along these lines only to the extent that it is practicable. My own feeling is that information to be gained from studies of program budgeted expenditures of very detailed and refined activities is exposed to extensive subjective judgment which may well render it invalid. In any budget or accounting system that is concerned with activities or functions we run into the traditional accounting problems pertaining to the allocation of joint costs and of indirect costs. The more refined the activities become, the greater is the concern with respect to these costs. I submit to you that when the activities are refined to the point of individual years of individual academic programs, the activity cost will be of limited use. These comments, I do not hesitate to point out, refer to the input side of the program budgeting equation – the easier side to quantify in terms of dollars.

I realize that many institutions are committed to this type of detailed analysis, perhaps as a result of jurisdictional requirements. So far, this is not the case in Ontario and I sincerely hope that it is not forced upon us although pressures seem to be building up in this direction. Concerning the formal budgeting, analyzing and reporting of expenditures along functional lines I personally would like to see this limited to the Departmental level.

I wish also to put forth the view that what are referred to as "costs" in an academic operation are very different from "costs" as used in a business sense. In Canada, and perhaps in the United States also, the amount expended on any program in a given year is to a very large extent determined by the amount of money made available by way of Government Operating Grants. While it is true that an institution may set its own priorities as to the internal allocation of available funds, the so-called costs of educating students in a program in large measure reflect the amount of money that the University has been able to place at the disposal of that program. A University is a spending organization and program costs could increase significantly if more operating dollars were made available. Care should be exercised in reporting program "costs" for fear they may become "bench marks" which reflect need in the eyes of granting agencies.

In Universities, I am of the opinion that we should not attempt to quantify beyond common sense proportions. A University is not a manufacturing organization where both input and output can fairly readily be quantified in financial terms. Even in manufacturing organizations, I venture to say that the tendency is towards direct costing and the making of priority judgments based on the concept of marginal contribution to overhead. It seems to me that any attempt to quantify the worth of University output in terms of money is of extremely dubious value.

It would appear reasonable, therefore, to expect that the results of any cost/benefit or cost/utility analysis based on such quantification would also be of dubious value. If the results can be validated, and I very much doubt that they can, I question whether the findings would have much, if any, bearing on a decision to continue or discontinue a particular academic program.

Notwithstanding my comments thus far, I hasten to say that detailed activities must be thoroughly studied in the budget process. In an institution such as ours, which has almost doubled its full-time enrollment in the past five years, we need to look at what we are presently doing with the operating funds at our disposal. We need also to determine how and where improvements can be made and we need to be able to compare ourselves with other similar-sized institutions in our own and perhaps in other jurisdictions. Without going into too much detail – I should like to make a few comments in this regard.

In the academic sphere of things, it is a very difficult matter, by reason of tenure, to simply "cut-off" established programs. Nevertheless, improvements in existing programs may well be possible and this whole area should be studied by academic planning and the business officer made aware of any contemplated changes in either staffing patterns or in any other aspect which has budgetary implications.

In the case of new or expanded programs the business officer must be provided with information sufficient to enable him to evaluate commitments on future operating budgets and not just the effect of the program on the budget of the forthcoming year. The review should therefore cover an extended period, say five years, to avoid a one year only foot-in-the-door approach to obtaining budget approval.

Research into proposed expenditures cannot be limited to academic areas alone. Service areas which may account for as much as 20 per cent to 25 per cent of the total operating budget must also be scrutinized through a study of methods and procedures – including budget forms design, staffing patterns, salary administration programs, policies concerning expenditures such as travel, receptions, etc. The aim of the University is to achieve operational efficiency at the most reasonable cost and this objective makes it imperative that a business administrator not proceed with the preconceived notion that the present way of doing things is necessarily satisfactory.

In the area of Physical Plant Planning, suffice it to say that the business office requires information that will permit a meaningful estimate to be made of the effect of any new building on future operating expenditures. An institution should not proceed with any physical plant expansion without first investigating the impact of maintenance and other "on-going" operating expenses of a proposed new building. These expenditures could be the cause of financial embarrassment in future years, particularly if the facility is of the type that does not result in additional enrollment and operating income.

Once a budget has been approved there is an obvious need to report actual operating results both internally and externally. Within the University, both management and those responsible for individual budgets must be made aware of the budget versus actual situation at least at monthly intervals. A computerized accounting system must be so designed as to produce detailed reports to individual budget centers and a clear, concise report to management. In this regard it is extremely useful to have the annual budget allocated to months on the basis of expenditure patterns experienced over the past few years. This provides a much better chance of spotting trouble areas early thereby avoiding the budget-maker's nightmare of having too much year left at the end of the money.

Concerning financial reports prepared for the benefit of granting agencies and other external users, it is important that they contain meaningful information. At the same time, whether the reports show expenditures by function or by nature of expenditure, or both, it is extremely difficult to judge the efficiency or effectiveness of any "non-profit" organization. The only effective way of making such judgments is through comparison with the operating results of other similar-sized universities. In this regard much research and many changes are necessary, particularly in our own jurisdiction, before meaningful comparisons are possible.

These examples, I believe, are sufficient to indicate that the business office needs to be supplied with information from experts in a variety of areas throughout the University. The need for coordination in the gathering of this information and of the studies required to produce it is obvious. It is important, however, that experts continue to do the work of their own areas. Planners should plan - teachers should teach - finance men should do the finance work - and so on. Whether the work is coordinated centrally in a totally integrated Office of Institutional Research or not, I think, has to depend on the size and complexity of the individual institution and is of relatively minor importance to the principle involved.

It is already becoming unrealistic and too costly to expect each institution to solve all problems on an individual basis. Some of these problems of necessity have to be solved collectively on a systemwide or jurisdictional basis. In Canadian universities we sadly lack uniform accounting practices, uniform account classification definitions, uniform reporting of operating results. As I mentioned earlier much work remains to be done in this area. In this regard the university business officers collectively, with the help of the Research Division of the Committee of Presidents' organization are working on this project.

In my view, a centralized research capacity of this type is much better able to collect and coordinate vast amounts of data and to conduct studies from which the entire system can benefit. I suggest to you, however, that we must be careful not to produce data for data's sake. Universities must be very selective in the studies that are made to be certain that they are designed to produce useful information that will not lead one to invalid or improper conclusions.

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COMMUNICATIONS BETWEEN THE FINANCIAL OFFICE AND THE INSTITUTIONAL RESEARCH OFFICE

Jerry Lee Jones
Tennessee Department of Education

Communication between the financial office and the institutional research office will always exist in every university whether administrative officials like it or not; whether officials are aware of it or not. The internal lines of communication in the absence of a planned channel will tend to be haphazard, disorganized, and riddled with misinformation. The necessity to insure meaningful and cooperative communication between these two university administrative areas is increasingly obvious if the institution's potential is to be fully achieved.

The kind of activity engaged in by both these offices varies significantly from institution to institution because of a variety of factors. The philosophy, interest and institutional political status of these offices are representative factors helping to determine the role played in university management and policy matters at each institution. Therefore, major variations exist from university to university; however, certain general observations tend to be generally representative of the communications dilemma existing in most institutions. These problems may even exist in the institutions where the institutional research office is placed administratively under the chief financial offices.

The financial office may have historically and may currently tend to suspect the institutional research office of attempting to gain some institutional power base historically maintained by the financial office by conducting fiscal administration studies. The institutional research office must have a relatively free exchange of data with the financial office, but the financial office may resist this because of its view of confidentiality of some financial information. There is a natural tendency to withhold some knowledge because of its administrative power base on the part of both these offices. Certain kinds of information should be carefully screened for internal use only; however, the necessity to recognize this fact may vary significantly between these two offices. The financial officer may insist on a policy of restricted circulation of research findings to the dissatisfaction of the institutional researcher.

The increased emphasis on program budgeting has necessitated a meaningful relationship between the financial and institutional research areas for a successful management team. The chief financial officer should have the very best counsel and guidance in the transitional movement to program budgeting. The historical records maintained by the financial office include: 1) Revenue by source, 2) aggregate expenditures by departments, and 3) legal records of fiscal transactions.

The movement toward program budgeting requires data for: 1) Revenue related to programs and sub programs, 2) program costs including marginal cost and opportunity cost, and 3) levels of academic production.

The financial office must continue to maintain the legal and administrative records for the institution. Any eventual transfer in budget and record format to a program oriented pattern should insure continuity of information.

Cooperative efforts by the financial and research offices directed toward establishing these working relationships include 1) comparability between the program budget and the current budget procedure, 2) common definition of terms and techniques, 3) correlation of reports by both offices, 4) long-range planning procedures, and 5) decision oriented reports acceptable by both offices without unnecessary duplication.

The ultimate in management oriented financial records should be recognized as a continuing partnership.

McKean and Anshen refer to three problem areas involved in the implementation of a programming oriented system. These three areas have added significance for the financial-research partnership.

1. Conceptual problems will be magnified if either partner attempts to unilaterally superimpose a program budgeting system over the existing record keeping procedure without appropriate communications and cooperative effort.
2. Operational problems will continuously plague a good programming system because of the dynamic nature inherent in this technique. A continuing cooperative sharing of data is necessary. Either of the partners that concludes his department is capable of presenting the entire programming system independently will prove the Peter Principle (Individuals will rise to their level of incompetence). The academic requirements of an appropriate system will not normally be available to the financial office.
3. Institutional problems may be necessarily aggravated if the financial office assumes the I.R. department is encroaching on sacred decision-making areas. A possible problem is the enthusiastic financial officer that assures the president of his department's capability and encourages a hands-off policy for the institutional research department. The inherent dangers of this procedure are equal to the opposite extreme where the financial officer is benevolent in turning everything over to the research department.

An integral part of this transition to program budgeting is a **tasks matrix** to identify the tasks to be completed by the research and finance offices. A timetable would be included with the tasks matrix.

The increasing number of major universities with red ink on their accounting ledgers reflects the critical strain on their resources. The cost of higher education is increasing at a faster rate than the revenue. Most financial officers have become sophisticated at projecting long range budgets and 5 and 10 year budgets are commonplace in financial offices. The technique has generally been an expansion of the annual budget in determining the long-range budget. A program budget in contrast is organized in terms of the explicitly stated objectives of the institution. The program budget contains alternatives in achieving these objectives and attempts to measure resources used and results or output of the operation. The program budget cuts across departmental lines and provides information demonstrating the cost implications of present decisions. A full analysis of the input and output of the university is essential in this process and should go beyond the ability of either the I.R. or Financial Office to unilaterally determine the decision factors; therefore, complete communication between these offices is highly desirable.

Both offices should recognize the difficulties of program, planning, budgeting, evaluating, systems (PPBES) for higher education institutions. These difficulties include but are not limited to the problem of identifying and measuring the student and research outputs of higher education. Second is the even more difficult problem of allocation of the output to the various organizational units. The third problem is that the production functions of higher education unlike business are difficult to determine in setting resource requirements for a unit of output. Fourth is the resistance of the academic man to reason in terms of input and output much like a factory producing widget. Fifth is the limited practical experience of large numbers of higher education institutions in the use of PPBES. These limitations or difficulties should not become the central points in a continuous dialogue between the financial and I.R. offices resulting in a solidification of positions resulting in bitter internal friction over the topic of program budgeting.

It is not the intent nor purpose of this paper to review program budgeting because the implicit assumption has been made that program budgeting is a part of the new management process for higher education.

The purpose is to identify some of the factors or assumptions resulting in curtailment of effective communication between the I.R. and financial offices. Program budgeting rather than preventing communication should be a major reason for meaningful two-way communication.

Institutional simulation models should provide another area of cooperation for the partnership. A comprehensive data system must be developed for the programming system and the potential simulation models are unlimited if both partners will promote the continuous use of this management technique.

The financial office is now at the threshold of major advancements in the dynamic world of the **Management Information Service**, but closing the door on scientific management techniques will relegate the financial empire in the administrative organizational pattern to a status of curator of historical records. Where either partner refuses to include a Program Evaluation and Review Technique (PERT) view of the cooperative tasks to be performed in the development of a management system the inevitable result will be a dissolving of the partnership with the resultant problems of inadequate cooperation.

Many institutional research departments consider their task complete when a report format has been developed and have no desire to engage in repetitive production of data. This approach would insure the financial office of the continuing functions it desires.

A failure in communication may result in the financial office establishing a research arm outside the research office. The merits of separate research efforts by each major office in the administrative structure will not be debated in this presentation: however, the financial office should not be permitted to establish a protective research oriented program that will serve no institutional objective.

Program, planning, budgeting, evaluating systems (PPBES), Program Evaluation and Review Technique (PERT), Management Information System (MIS) and a host of other systems are relatively new to higher education and we should review these trends in management with a view toward their affects on the financial and I.R. office's relationship.

A definition of relationships is in order and it might be considered to be the bonds that link objects and attributes in the system process. They may be postulated to be among all system elements, subsystems and between two or more subsystems.

A relationship of the first order would be functionally necessary to each other. A relationship of the second order would be the cooperative action of independent units or agencies of the institution taken together to produce total effects greater than the sums of their effects taken independently.

It is the second order of relationship between the two offices or units under consideration in this paper that become so critical in the systems approach. At its simplest a system is the device for examining the process of problem solving.

The 40 billion dollar estimated expenditure for higher education by 1975 representing approximately 3.3 per cent of the Gross National Product reflects the mammoth management responsibility. The President's report of January, 1969, entitled "Toward a Long-Range Plan for Federal Financial Support for Higher Education" reflects the growing financial dilemma of the American higher education community. The many charges of inadequate meaningful financial reporting by colleges and universities reflects the need for major reforms. The institutional research department could become the "Knight in shining armor" but if the rescue is to be successful a channel of continuing communication must be developed.

The **College and University Business Administration**, Revised Edition contains the following observation concerning program budgeting,

> "The value of program budgeting depends upon the establishment of meaningful relationships between projected program and resources, and is enhanced by integration with the accounting system to meet the evolving requirements.
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> The chief business officer is responsible for estimating costs and developing a long-range financial plan to support the academic program. This process should be carried on in cooperation with the appropriate academic officers. The plan should include estimates of added costs arising from expansion, improvements, and new program provisions, as well as those for increases in salaries and general rises in price levels.
>
> In developing long-range plans, both academic and business officers should consult the studies produced by their institutional research offices. Those offices not only accumulate data basic to long range plans, but they also engage in continuing analyses and research that are

helpful both in the establishment of objectives and in periodic review and modification of plans."

The necessity to review the economic cost and present accurate and understandable financial picture of the institution is obvious when we consider the charge of McGeorge Bundy concerning our current financial reporting. He states:

> "The best single illustration of this problem, I have always thought, is the question of allocating the costs of a major university library. This is the place that draws the professors that write the books and lecture the boys and attract the graduate students who fill the corridors. This is the place that devours the funds that pay for the pages that no one reads for a hundred years. This is the place that attracts the gifts that lower the taxes, and pamper the pride of the bibliophiles. This is the penance of presidents. To whom should it be charged?
>
> The example demonstrates that the allocation of costs is always somewhat arbitrary. There is much force in the argument that a university is a single institution and that all its income and all its expenses are best considered together. Yet, on a proper modern view, the fact that financial analysis is difficult is no excuse for avoiding it. Above all – and I think this is my central point – complexity is no excuse for obscurity. The educational meaning of our financial facts and figures may sometimes be arbitrary or indeterminate, but the facts and figures do exist and they need to be more openly and fully reported than they are now".

The charge is clear and the financial officer is not the singular subject of the criticism. The opportunity for presenting a more comprehensive view of the institutions financial-cost areas may be achieved, if we are willing to attack the problem in a cooperative manner and have complete cooperation of the I.R. and financial office.

What are the basic steps to encourage effective communication between the I.R. and financial offices?

1. The I.R. department perceives a situation or problem that could be jointly attacked. Either the I.R. or financial officers recognizes a problem with potential benefit being denied from joint solution.
2. The Institutional Researcher clarifies his own thinking regarding the situation or condition perceived.
3. The Institutional Researcher perceives a situation or condition for presenting his ideas.
4. The Institutional Researcher clarifies his own thinking regarding the situation or condition perceived in view of the objective or purpose.
5. The researcher feels a need to or is motivated to communicate. This necessity of sharing the problem is a key factor.
6. The researcher clarifies his purpose or objective in the proposed communication. A clear understanding by the I.R. department of the purpose is essential.
7. The I.R. identifies potential receivers of the message. A view toward others in the organization with interest in this problem must be identified.
8. The researcher develops key concepts of the proposed message.
9. The researcher considers background knowledge, attitudes and possible reactions etc. of the intended receivers.
10. The researcher selects working content, etc. that is compatible with the objective and intended receivers.
11. The researcher selects the medium consistent with the objective, traditions, and intended receivers' attitudes, expectancies, etc.
12. The researcher, recognizing the importance of climate and context, attempts to time his communication so that the setting, the situation, and the general mood and climate of receiver will be optional when receiving the message.
13. The researcher sends his message via the "best" medium and through the proper and appropriate channel.
14. The financial officer receives the message, at a certain time in a certain situation, and with a certain mental attitude.
15. The financial officer interprets and considers content of message.
16. The financial officer makes a choice among alternate actions, etc. based on the message.
17. The financial officer reacts based on position of, and relationship with the Institutional Research Department based on the content, time, medium used, and his own needs and interests.
18. The financial officer responds to the institutional research department and thus feedback occurs.

These basic steps to effective communication may be reversed and the financial officer may be the communicator rather than the communicatee as I have presented the analysis. The essential ingredients for these basic steps in communication, to properly function, must be the willingness of both the Institutional Researcher and the Financial Officer to recognize that the institution should have both their functions properly functioning to achieve maximum benefits.

A continuation of effective communication between these offices will be enhanced by the following:

1. **Clear** channels of communication.
2. **Current** nature of communication to insure that the problem is under immediate investigation.
3. The **consequences** of the communication are recognizable and acknowledged by both parties.
4. A **correct** statement and understanding of the circumstances necessitates a joint review.
5. A **concise** statement should be jointly considered by both staffs.
6. **Continuous** communication takes place in a brainstorming or think tank or other acceptable ways between the two staffs.
7. The **cause** both offices serve are institutional rather than office oriented.
8. **Complete** and open communication is a desirable end for both offices.

These eight "C's" of communication (clear, current, consequence, correct, concise, continuous, cause, complete) should serve the institutional researchers and the financial officer well.

The university is constantly in need of information and we might view this according to the level of information: 1) Information for daily operation, 2) information for control, and 3) information for planning and management decisions. The financial officer constantly works with information for operation and control; however, cooperation with the institutional researcher is desirable with respect to information for planning. The president must involve both the institutional researcher and the chief financial officer when planning for the institution's future.

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THE INTERFACE OF INSTITUTIONAL RESEARCH WITH THE DIRECTOR OF PHYSICAL PLANT AND PHYSICAL PLANNING

Mel Lasell
Texas A&M University

Texas A&M University created an Office of Planning and Analytical Studies in March, 1969. The functions of institutional research and planning are performed in this one office. Work is currently underway to develop a Master Plan for the University and this paper is a result of our work in this area. For additional information reference should be made to **Guidelines for Planning in Colleges and Universities**, a five volume report by Dr. Charles Pinnell, Director of Planning and Analytical Studies, Texas A&M University, and Mr. Michael Wacholder.

There has been a great tendency in the past for institutional planning to emphasize physical plant planning or "campus planning" and omit serious considerations of management and program planning and financial planning and often produced plans which were neither related to the goals of an institution nor financially feasible. Thus, the planning effort often furnished the educational institution with a "master plan" which stated where the institution should be at some future time but unfortunately did not specifically establish why it wanted to be there, nor how it was going to get there.

A desired planning process for an educational institution is comprised of a rather extensive system of interrelated and interdependent efforts. The total planning effort can logically be divided into three major phases which are: 1) Management and program planning, 2) physical plant planning, and 3) financial planning. A successful planning system will contain all these major phases and will finally merge them into a single product.

The concept to be employed is that of first estimating the resource needs of each organizational unit of the institution and then combining these needs to produce total institutional needs. This permits developing a close relationship between the program and/or level of activity of a given unit and its resource requirements.

It is recognized that an organizational unit might have these program areas: 1) Teaching, 2) research, and 3) public service and/or extension work. The main goal and objective of most institutions of higher education is the education of students and the advancement of knowledge; thus, it is extremely important that effective planning take place to provide the faculty and staff with facilities and financial resources necessary to meet this objective.

Due to the limited time element, a brief discussion of projecting the requirements for faculty and staff, facilities, and financial resources will be presented.

The Director of Physical Plant and Physical Planning must receive information from the Institutional Research Office regarding the amount and type of facilities the institution will require in a given year. This information would result from the Institutional Research Office's projections of the number of students, faculty, staff and space.

As was stated earlier, Texas A&M University is developing a Master Plan for 1978-79. The following procedures were used in determining the projected number of students, faculty and staff.

Each academic department was asked to make enrollment projections for their departments. The departments took into consideration their existing curricula and proposed curricula for the period 1969 to 1978. The departments projected their majors by level. From these projections, future teaching loads (number of credit hours) of the department can be established. The department must not only consider enrollment increases for its own majors but must also concern itself with the impact of enrollment increases in all academic departments of the University. For example, the English department must not only be concerned with teaching its own majors but must also consider all the other academic departments' majors that require specific English courses.

A computer technique for estimating future teaching loads for individual departments makes use of a "distribution matrix." This matrix describes the input-output characteristics of all departments relative to Student Credit Hours and Contact Hours (number of hours spent in theory and practice). The matrix is defined by the curricula of various departments which prescribes the various courses to be taken by majors of the departments. The distribution matrix provides the answer to the question of how the Student Credit Hours generated by the majors of a given department will be distributed to the various academic departments of an institution. A matrix is required for each student level since the curriculum requirements are different at the various levels. However, once a distribution matrix is formed for each student level, then the projected enrollment data for each department may be utilized to predict future teaching loads for each department, and associated contact hours for theory and practice.

Once a projected number of Student Credit Hours has been developed for each department that will be taught during the 1978-79 fiscal year, we can estimate the number of faculty positions required per department. The estimating procedure requires that the department establish a Student Credit Hour to Full Time Equivalent (FTE) Faculty Ratio. A baseline value for the SCH/FTE Ratio is that specified by the State's Coordinating Board's Formula Rates. If the institution does not have a State Board, it should develop acceptable work standards for its faculty members. A separate SCH/FTE Ratio is required for Undergraduates, Masters and Doctoral student credit hours. Once the ratio is established, the estimated number of faculty members can be derived by dividing the SCH/FTE Ratio into the associated projected student credit hours.

Staff and other support personnel can be estimated for the department by establishing a ratio of projected faculty members to support personnel. Future research and public service and/or extension staff should also be projected after analysis of past and future trends. Facilities – The

Institutional Research Office must conduct a complete inventory of all existing facilities. This task is critical due to the necessity of knowing what facilities exist before you can determine what additional facilities will be required. Through the use of computer programs, space utilization studies can be made to determine how efficiently these resources are being used. Many institutions of higher education have discovered that through effective scheduling, additional classroom space was not needed, even though the institution experienced significant enrollment increases.

The desired management of teaching facility space defines the need for one central office of the university to have the responsibility for space assignment. This prohibits departments from "owning" certain teaching spaces that could be utilized by several departments and provides a total university approach toward space management and utilization.

In determining the required teaching facilities for a given department, two types of space must be considered, teaching space and non-teaching space.

The teaching space or classroom and laboratory space required for a particular department can be determined by multiplying the projected number of contact hours times a space standard or factor. The space factor for classrooms results from an average of 15 square feet per student station, 30 hours scheduled per week, and 50 percent station utilization. These conditions would produce a space factor of:

$$\text{SF} = \frac{15}{30 \times .50} = 1.0$$

A space factor of .9 should be used in planning classroom space which can result through better scheduling techniques. This space factor is then multiplied by the projected Student Contact Hours in lecture to determine classroom space.

To determine the amount of laboratory space required for a particular department the number of Student Contact Hours in laboratory is multiplied by a space factor. Each department might have a different space factor due to the area per student station required. For example, an architectural lab might require a design of 55 square feet per student station while a biology lab might require 30 square feet per student station. The space factor for laboratories results from the area per student station, 20 hours scheduled per week, with 60 percent station utilization. These conditions would produce a space factor of:

$$\text{SF (Arch.)} = \frac{55}{20 \times .6} = 4.58 \quad \text{SF (Biol.)} = \frac{30}{20 \times .6} = 2.50$$

It may be necessary to develop space factors for specific labs such as lower level labs versus upper level or graduate labs. In general, it is recommended that each institution develop space factors for teaching labs on a department-by-department basis.

There is a need to provide service space for classrooms and laboratories. This space would provide for projection rooms, cloak rooms, storage, preparation rooms, animal rooms, etc. The space factors (classroom and laboratory) recommended for estimating future teaching space are adequate to provide sufficient space for both teaching and service with some exceptions. The exceptions would occur where departments require extremely large preparation areas – animal holding quarters, cold rooms, etc. This type of space should be considered as an additional requirement and estimated separately for each department.

Now that we have determined the department's space requirements for classrooms and laboratories, we must determine the non-teaching space. Non-teaching facilities are defined as those facilities providing the following types of space: 1) Offices, 2) research labs, 3) support space, 4) conference rooms, 5) storage and service areas, and 6) special uses. These types of spaces are vital to the teaching function and careful planning for each must be performed. The basic parameter of non-teaching space is the number of personnel to be utilized in the program of a given department. In order to estimate space requirements for personnel, it is first necessary to establish a few basic categories for personnel definition.

The personnel categories are as follows: 1) Administrative – This will include Deans, Assistant Deans, and Department Heads. These types of personnel usually require more space due to the volume of activity associated with their offices. 2) Professional – This would include instructors through professors. 3) Support – Such personnel as secretaries, clerical, staff, technicians, and other similar personnel for which work space must be provided. 4) Graduate Assistants – Graduate Assistants employed in teaching, research, and public service and/or extension. 5) Hourly – Part-time students or staff employed on an hourly basis for which work space is required.

The personnel of a given department would be distributed to one of the above five categories. The amount of space requirements can be determined by multiplying the number of positions in each category by an associated space standard. The following space standards could be used: 1) Administrative – 240 square feet of assignable space for Deans, 180 square feet of assignable space for Associate Deans and Department Heads, 150 square feet of assignable space for Assistant Deans, 2) professional – 120 square feet of assignable space, 3) support – 110 square feet of assignable space, 4) graduate assistants – 60 square feet of assignable space, and 5) hourly – 50 square feet of assignable space.

The Conference space required by a department can be estimated by using a minimum space standard of 180 square feet of assignable space, or 20 square feet of assignable space per faculty position.

In addition to the above space requirements, provisions must be made for storage, reproduction work, and other office service needs of an academic department. An estimate of these needs can be made by multiplying the previously estimated total assignable space by 5 percent.

There will be some unique requirements for a particular organizational unit that cannot be adequately estimated by the previously discussed procedures. These spaces should be listed and justification made as to the need and amount of space required.

It should be noted here that the space standards used in this presentation were developed by the Office of Planning and Analytical Studies and pertain to Texas A&M University. These space standards are currently being reviewed by the various organizational units of the University, and it is recommended that each institution develop space standards applicable to their particular institution.

The major elements in Physical Plant Planning are as follows: 1) Facilities planning, 2) traffic, parking, and circulation planning, 3) utilities planning, and 4) land use planning.

Each major function, or element, contributes to the ultimate physical plant plan, and it is necessary that they are conducted simultaneously in order to insure consistency. Decisions in each individual process will produce implications for decisions relating to the other processes and the total plan. Consistency, based upon a recognition of the interdependency of these individual processes, must be achieved. This consistency is based upon a well-coordinated total effort that is comprised of integrated and cooperative parts. As the planning process progresses through each phase, it is dependent upon inputs and interactions between land use, traffic, facility and utility considerations. This insures that each significant decision involves all the relevant determinants.

Effective physical planning is by no means an independent process – it is dependent upon interactions and inputs from the other phases of Management and Program Planning and Financial Planning.

The Financial Planning phase must test the plans developed in the Management and Physical Plant phases to see if they are financially realistic; and, if the plans are not financially realistic, then a means of resource allocation must be sought which will bring "dollars required" in line with "dollars available."

The Financial Planning process demands a thorough analysis of projected program costs and anticipated income.

There are four basic approaches to achieving a cost-income balance: 1) Development of increased income, 2) modification or elimination of some objectives, 3) utilization of alternate means of obtaining objectives, and 4) combinations of the above. Each approach must be carefully analyzed as to its effect on the realization of the total plan.

In conclusion, there should be strong interface between the Office of Institutional Research and the Director of Physical Plants and Physical Planning. The Institutional Research Office can and should provide valuable information pertaining to the quantity and types of facilities that the institution will require. These inputs result from analysis of projections and plans developed in terms of students, faculty, staff, space and financial resources necessary for the institution to accomplish its stated goals and objectives. Information must flow freely between the two Offices to insure a Physical Plant Plan that is both functional and financially feasible.

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THE SUMMER SESSIONS DEAN AND INTRA-CAMPUS COMMUNICATION

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INTRODUCTION

Deans or directors of summer sessions are frequently in the position of having to assume the adequacy for communication that exists between the student and office staff personnel. Most summer deans or directors are never completely sure how well staff members in various campus offices interpret the information found in their summer sessions catalog, university catalog, and other official university documents.

Those responsible for summer programs tend to be more sensitive to "student needs" because they are continuously building new programs. Administrators responsible for summer programs feel keenly that office staff members should direct students to the satisfactory solution of their problems and questions.

The following research was one attempt to measure the adequacy of office staff – student communication in a given large, urban, midwest, public university in the summer session.

THE PROBLEM

The purpose of the study was 1) to determine the accuracy of information given by secretaries to summer students as measured by a student referral matrix; 2) to develop a student referral index providing an accurate reference source; 3) to develop an in-service program of education designed to insure the accuracy of student-related information at the secretarial level. (Only Item 1 was explored in this paper.)

IMPORTANCE OF THE STUDY

An increasing number of deans and directors of summer programs are becoming aware that students have difficulty in comprehending the complexity of many university procedures which may or may not serve their needs.

During the past two decades, student growth and physical plant growth have doubled or tripled on many campuses. Yet, during this same period, few resources have been assigned to meet the pressures which result from the increasing complexity of human interaction on campus. Generally, it has been much easier to obtain Board approval to expand the physical aspects of the university. Few universities have attempted to organize in-service education programs for staff members on a campus-wide basis to assume greater understanding between the student and the university.

It is not uncommon for a university staff to rationalize a confused situation by invoking a number of cliches; i.e., "This is the price we pay for bigness;" "The computer broke down;" "poor communication" or "Systems don't know what they are doing." Unfortunately, people tend to become brainwashed and accept these cliches as real, meaningful explanations.

The student of the late 1960's at first believed that because of the university's unique resources, it was a place interested in solving problems rather than rationalizing problems. These students, however, become confused about the university when the university responds to them with indifference. Students expect the university to be one of the few existing institutions that respect the uniqueness of the individual and stands for excellence. When a situation arises on campus where students are treated in an arbitrary manner, they feel that the university is not fulfilling its mission.

Why does a campus respond to students with indifference or in an arbitrary manner? It is when the professional administration and clerical staff fail to understand the basic role and purpose of the university. Secondly, it is when the management (administration) of the university does not provide an opportunity for the staff to learn their role in relation to the other campus offices, and the unique purposes of an institution of higher learning.

This study, therefore, was an attempt to measure, very specifically, the level of knowledge of selected, key staff personnel regarding the academic process and the administrative process in relation to students' needs. The study also attempted to learn how these staff members respond individually to their responsibility in providing answers to students' questions.

DEFINITION OF TERMS

Student Referral Matrix – The Student Referral Matrix will be referred to by SRM in the remainder of the paper.^{1} The SRM was the instrument used to collect the basic data reported in the study. It is a questionnaire developed by graduate students who attended a seminar on secondary administration under the guidance of the present author. The SRM was the result of intense class discussion on topics the students perceived as possible communication problems.

The questions, as developed by the class, covered many items of information that a secretary might be asked by a student during a given work day. Some questions dealt with specific information on admission, fees, permission for withdrawal, etc. Other questions were designed to elicit student referral-type answers.

Secretary – University office employees who have the civil service designation of Clerk II, or the non-civil service designation of dean's secretary.

Academic Office – The following academic offices participated in the study: all college offices; the Office of Student Services (Counseling and Advising); Registrar; Summer Sessions; Evening College; Admissions, and a random number of academic departmental offices.

Sufficient Knowledge – Measured by responses of secretaries to employ formal or informal channels of communication to find adequate answers to students' questions. Also, measured by secretaries ability or willingness to find adequate answers to the SRM in official university documents, or by personal contact.

Official University Documents – University bulletins, class schedules, catalogs, student handbooks, university memos, etc.

METHOD

The following two hypotheses were tested:

Hypothesis I – University secretaries have sufficient knowledge of the information that is specifically stated in official university documents to adequately answer students' random questions.

Hypothesis II – University secretaries have sufficient knowledge of information that exists at the "informal" level or randomly noted in official university documents to adequately answer students' random questions or make appropriate referrals.

The SRM was designed to measure the adequacy of communication between different job classifications of secretaries and students. It was sssumed that one could measure the quality of student – secretary communication by observing and noting the accuracy of student referrals.

The sixty-eight question SRM was administered to eighteen deans' secretaries, including several chief office clerks, and twenty-two departmental secretaries. Parts "A" and "B" of the SRM were designed to measure the referral aspect of the study: "Where would you send a student for..........?" Part "C" of the SRM was designed to directly measure specific items found in university source documents. It was not expected that any one interviewee would be able to answer all of the specific items in Part "C" without reference to university source documents.

Approval and support to interview the secretaries was given by the respective dean prior to the actual interview. All secretaries and chief office clerks were interviewed in their respective offices by graduate students from the psychology department. Those interviewed were informed that the purpose of the questionnaire was to ultimately help develop an educational program which would add meaning and understanding to their jobs. The secretaries were assured that their responses to the questionnaire were not coded in any way and that all questionnaires and their contents were kept anonymous.

The present author assumed that each of the secretaries interviewed had considerable contact with all levels of students. The interviewer asked each secretary to check or fill in each item in Parts "A", "B", and "C" of the SRM. The secretaries were instructed that it was an "open book" type interview situation. The interviewers carefully noted what type of aids each secretary employed.

The data was collected during July, August, and September of 1969.

RESULTS

TABLE I

Percentage of Correct Responses to the Student Referral Matrix[2]

	Percent Correct
PART A	
Deans' secretaries	89
Department secretaries	45
PART B	
Deans' secretaries	68
Department secretaries	45
PART C	
Deans' secretaries	62
Department secretaries	29
TOTAL CORRECT RESPONSES	
Deans' secretaries	70
Department secretaries	44

Hypothesis I, which stated that university secretaries have sufficient knowledge of the information that is specifically stated in official university documents to adequately answer students' random questions, was rejected.

Hypothesis I was tested by Part "C" of the SRM.[1] Part "C" was composed of twenty multiple choice questions taken from fee schedules as listed in the university bulletins and the summer catalog. In Part "C" there was only one correct answer to each of the twenty questions. In spite of the availability and exactness of the answers, the deans' secretaries scored correctly sixty-two percent of the time. Departmental secretaries, on Part "C" of the SRM, scored correctly twenty-nine percent of the time. It was logical to assume that the number of correct responses to Part "C" would be very high, or near perfect. It was not logical to assume that the percentage of correct responses from Part "C" would be lower than for Parts "A" and "B" where the correct answers were comparatively more obscure (see Table I).

Hypothesis II, which stated that university secretaries have sufficient knowledge of information that exists at the informal level or randomly noted in official university documents to adequately answer students' random questions or make appropriate referrals, was partially accepted. Data reported in Table I above indicates that both groups made more correct responses on Parts "A" and "B" than on Part "C".

The material in Parts "A" and "B" was drawn from a variety of university source documents. Some material in Parts "A" and "B" was informal in nature, i.e., not documented specifically but passed among secretaries as a matter of practice.

Part "A" contained referral questions related to admission procedures. Deans' secretaries were correct in eighty-nine percent of the referral questions while the other group scored only forty-five percent correctly. Apparently the secretaries simply did not understand the basic organization of the admission procedure. The probability was less than chance that a departmental secretary would make a correct student referral to obtain information on admission applications.

Part "B" contained multiple choice referral questions related to the academic process on campus. Deans' secretaries made sixty-eight percent correct referral responses while the departmental secretaries made forty-five percent correct referrals. The generally low percentage indicated that Hypothesis II should be partially accepted. Both groups of secretaries did not understand from one-third to one-half of the basic academic rules and procedures tested in Part "B" of the SRM.

Overall, the deans' secretaries appeared to understand significantly more about the academic process than departmental secretaries as shown in Table I under 'Total Correct Responses'.

A comparative item analysis of all SRM questions, including percent correct, is located in the SRM Raw Data Tables.[2]

DISCUSSION

Limitations of Study

1) All of the deans' secretaries and chief office clerks were included but only one-third of the department secretaries were included.

2) The secretaries knowledge of student-related information and its location was subject to limitations of prior supervisory instruction. The intensity of supervisory instruction tended to vary greatly from department to department.

3) The amount of formal education of the secretary was not controlled in the selection of secretaries.

4) The frequency of student contact was not taken into account for the selection of secretaries.

5) Specific selection of secretaries was not made on the basis of other non-university work experience.

6) Since there was no general orientation program relating to secretarial responsibility for student information, all responses were unique or naive.

7) The length of employment at the university was not considered in the selection of the two secretarial groups.

8) Secretarial response to information that was available at the "informal level" tended to be as reliable as its source. Sources for information within the "informal level" were completely uncontrollable.

The responses to the SRM by two different categories of university secretaries at an unidentified, large, public, midwestern university did not auger well for the student seeking information or referral information.

Based on about fourteen years' experience in higher education, the present author would suggest that the data reported in this study is typical of large, public institutions.

The summer dean's or director's performance as an administrator will inevitably be affected by the quality of communication between staff personnel and students. How many students give up, turn off, or do not enroll in a given course because a secretary did not know where to find the answer to the student's question? In a broader sense, students may perceive the inaccuracy of secretarial responses as a reflection of indifference on the part of university management. Students today look to the university as a model of excellence in all of its aspects. Administration, therefore, cannot rely upon inferior performance by their staff members.

Overall, the deans' secretaries appeared to be better informed on all three parts of the SRM.[2] Deans' secretaries should be expected to perform more adequately than departmental secretaries because they have greater responsibility and more complex jobs. Analysis of the present data, however, raises many questions about the quality of the deans' secretaries' performance. Deans' secretaries develop a broader view of the university, probably because of the wider content of their work. They increase their own awareness by assuming the responsibility to train other secretaries as office managers in large college offices. Deans' secretaries, therefore, should have generally recorded a higher percentage of correct responses. Their responses to Parts "B" and "C" were not adequate in relation to the level of their jobs.

Departmental secretaries, because of their special relationship to a given academic department, may not learn to have a "global" view of the university. The turnover of departmental secretaries tends to be more frequent than does the turnover of deans' secretaries due to status and pay factors. However, this should indicate the need for greater in-service education for departmental secretaries.

During data collection, the interviewers noted whether or not the given secretary used university source documents and contacted other staff for help. The interviewers reported that only a few secretaries used a variety of university source documents and rarely did anyone contact a colleague. This indicates that there is little communication among secretaries resulting in compartmentalization of information. This situation points up a need to encourage secretaries to contact one another to exchange ideas and share solutions to problems.

Another unusual behavior characteristic observed by the author was the frequency of "don't know" responses. Did this indicate that those staff members were lazy or indifferent? Did this suggest bewilderment or lack of motivation? The author concluded that the frequency of "don't know" responses suggested a lack of information due to insufficient instruction. Since these staff members have not had any formal type of orientation or training about the academic process, their responses are understandable.

A few interviewers reported that some secretaries appeared hostile or threatened. These responses were not unexpected since this was the first time the secretaries had ever been questioned about their knowledge of the academic process.

Some of the secretaries suggested that the questions were ambiguous. However, students' questions to staff and faculty are many times vague. Quite frequently students will ask the wrong questions because they do not have enough understanding of the processes to ask the appropriate question. Staff members should be trained to handle the students' ambiguous questions. They should be taught how to question a student to help him properly define his need.

There were several acceptable answers to certain questions. The more experienced secretary or staff member was able to properly identify the acceptable answers. Younger, inexperienced secretaries need to be made aware that the university is a complex organization with overlapping jurisdictions.

The existence and effectiveness of the "informal" structure was evidenced by the relatively greater number of correct responses to Parts "A" and "B" over Part "C". Generally, the secretaries performed better with the randomly documented material and non-documented material than with the specifically documented material. Logic would dictate that the secretaries should have had a greater command of the specifically documented material. Reliance upon an "informal structure" for personnel training is a good example of impractical management.

CONCLUSIONS AND RECOMMENDATIONS

The data produced by the SRM clearly indicates that communication covering the basic academic process (the functioning of rules, regulations, and procedures. of related academic matters) between students and select staff personnel can be improved.

Certain problems that summer deans or directors experience probably result from misunderstanding between staff and students. It is recommended that institutions of higher learning, motivated by the summer deans or directors, develop continuing in-service education programs for staff members who have student contact. Summer deans or directors generally have an overview of the university that only a few staff members have and, therefore, should play a key roll in directing a university-wide in-service education program.

Well-defined programs would improve student-staff relationships by reducing the "run-around" effect or "don't know" response on campus. The morale of staff members would be improved as the in-service program made them more self-reliant in their roles at the university.

It is suggested that the following organizational outline could be used as a model for campus-wide in-service education concerning the academic process.

A. Implement a seminar-type in-service education for deans' secretaries and departmental secretaries entitled: "The Academic Process and Information Flow Service" – (APIFS)

B. General purpose of APIFS: To implement the information flow between:

1) Staff and student,
2) staff and staff, and
3) staff and planning staff.

C. The seminar would:

1) Increase staff understanding of the academic process and general university programming.
2) Expand staff members' attitude toward their responsibility for information flow.
3) Expand staff understanding of "the student."
4) Expand understanding of staff members in relation to their job responsibility.
5) Expand staff members technical skills.
6) Expand staff members understanding of the administrative process.
7) Provide an immediate and continuous feedback mechanism for university operation and planning administration.
8) Reduce tension between students and administration.

D. Longer range outcome of the APIFS:

1) Development of an adequate all-campus communication system at the staff-student level.
2) Development of a management training program to develop management skills for university office supervisory staff.
3) Promote greater personal involvement of all staff personnel in the university.

Finally, most educators would argue that institutions of higher learning and business do not have much in common. However, they do have one important common characteristic which is, they both share the advantages and disadvantages of the "bureaucracy." Large corporations and businesses faced the need for in-service training some thirty years ago. It is not uncommon to find large separate departments whose only responsibility is to develop and implement training programs for all ranks in the organization.

Universities have grown to the point where the informal organization cannot support or maintain an adequate in-service training for its expanded staff. The summer sessions dean or director, because of his unique overview of the university, can play an important role in this new phase of university development.

The author wishes to convey his appreciation to The National Association of Summer Schools for their interest and encouragement with this study.

[1] Appendix A contains the Student Referral Matrix questions.

[2] Appendix B contains the answers to the SRM.

[3] Appendix D contains graphs of the answers to the SRM. Appendixes have not been included. The author can provide further information.

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THE NON-INSTRUCTIONAL PERSONNEL AS A COMMUNICATIVE SEGMENT IN HIGHER EDUCATION

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Introduction and Purpose

The origin of this study lies back several years when the author was in charge of non-instructional personnel at Winston-Salem State University. One of the questions that remained unanswered while working with this group was the extent of the vital link that persons in this category maintained in communication in higher education. During the summer of 1969, a trial data-gathering instrument was developed and used in a pilot study in order to evaluate its workability. Results indicated that the instrument could be used to determine some of the non-instructional personnel's activities in communication in higher education.

The study was conducted with 81 or 65 percent of the non-instructional personnel. In this group, 52 percent or 42 of the respondents were employed one to three years; 20 percent or 16 persons from six to ten years; 14 percent or 11 from seven to nine years; 12 percent or 10 from ten to twenty-one years; .8 percent or one for 25 years; and .8 percent or one for 35 years. A complete sample of the non-instructional personnel positions and offices was obtained in the survey (see Appendix B and C).

A few terms which have special meaning in this study are:

Academic – positions directly supporting instructional areas.

Administrative – positions giving direct support to the general operation of the University.

Auxiliary services – positions giving direct support to services functioning in a subsidiary capacity, such as dormitories, bookstore, cafeteria, post office, and laundry.

Community Agencies and representatives – government, businesses, schools, churches, and personnel representing other social institutions of the community.

Maintenance – positions offering direct support to the physical environment of the University.

Non-institutional staff members – personnel assigned to a work station other than the reporting office of employment.

Method

The non-instructional personnel, at any institution, spend many hours per week in contact with students and other persons of the college or university community. This study was designed to determine the volume and nature of contacts that the non-instructional personnel have in communication in higher education. It was conducted by the use of questionnaires completed by the non-instructional staff and personal interviews with both non-instructional and instructional staffs.

Findings

The study revealed the extent to which communication either provided information about the university and/or secured information for the university. Further findings revealed the extent of contacts categorized as person-to-person, via telephone, and via correspondence. The non-instructional personnel cooperated willingly and expressed a desire to be informed of the results of the study.

The data found in Tables I through V show the specific findings as related to contacts with students, faculty, other non-instructional staff members, and community – agencies, representatives, and individuals. Further data provides information concerning communicative activities during off-job hours.

TABLE I. ON-JOB
AMOUNT OF TIME SPENT WITH STUDENTS PER WEEK

Nature of Contact	N	Total	Range	$\bar{X}$ Hours
Person-to-Person	81	825 hrs.	0-36	10.1
Telephone	81	141 hrs.	0-8	1.7
Letters	31	543	1-65	17.5

N = Number of responses. $\bar{X}$ = Mean of sample data.

The data in Table I show the amount of time non-instructional personnel spend with students per week. Eight hundred and twenty-five hours were reported by the 81 respondents. The average is 10.1 hours of person-to-person contacts per week. One and seven-tenths hours of contact per week were by telephone. Fifty-five percent of the contact time was used to provide information and 31 percent to secure information. Fourteen percent of the contacts were engaged in both securing and providing information.

TABLE II. ON-JOB
AMOUNT OF TIME SPENT WITH FACULTY PER WEEK

Nature of Contact	N	Total	Range	$\bar{X}$ Hours
Person-to-Person	81	313 hrs.	0-10	3.8
Telephone	81	147 hrs.	0-10	1.8
Letters	30	270	1-25	9.0

N = Number of responses. $\bar{X}$ = Mean of sample data.

The non-instructional personnel spend, on the average, 3.8 hours in personal contact with the instructional faculty per week. Nearly two hours per week is spent in contact by telephone. As in the case with students, 55 percent of the contact time is used to provide information and 30 percent is used to secure information. Fifteen percent of the contacts were engaged in both providing and securing information.

TABLE III. ON-JOB
AMOUNT OF TIME SPENT WITH OTHER NON-INSTRUCTIONAL STAFF MEMBERS PER WEEK

Nature of Contact	N	Total	Range	$\bar{X}$ Hours
Person-to-Person	81	327 hrs.	0-29	4.0
Telephone	69	127 hrs.	0-8	1.5
Letters	20	151	2-20	7.5

N = Number of responses. $\bar{X}$ = Mean of sample data.

Forty percent of the contacts in Table III provided information. Twenty-six percent secured information. Thirty-four percent of the contacts were engaged in both providing and securing information.

TABLE IV. ON-JOB
AMOUNT OF TIME SPENT WITH COMMUNITY AGENCIES, REPRESENTATIVES, AND INDIVIDUALS

Nature of Contact	N	Total	Range	$\bar{X}$ Hours
Person-to-Person	243	198 hrs.	0-5	.81
Telephone	243	136 hrs	0-5	.55
Letters	49	272	1-25	5.5

N = Number of responses. $\bar{X}$ = Mean of sample data.

The data in Table IV show an increase in N. Each respondent was asked to give the amount of time spent separately with each community component – agencies, representatives, and/or individuals – thus accounting for the increased number of responses from 81 to 243. Forty-three percent of the contacts provided information; 31 percent secured information; and 26 percent provided and secured information.

TABLE V. OFF-JOB
EVENINGS AND WEEKENDS

Time Spent	N	Total Hours	Range	$\bar{X}$ Hours
Providing Information about the University	62	106	0-7	1.7
Securing Information for the University	61	69	0-6	1.1

N = Number of responses. $\bar{X}$ = Mean of sample data.

The data in Table V show the amount of time spent providing information about the University and securing information for the University during off-job hours.

Probable Value to Educators

The writer feels that the study will be of significant value to educators. Administrators and instructional personnel should be able to use the information in appraising the effectiveness of this segment of communication in higher education. The data presented may be utilized in assigning staff and other non-instructional personnel to areas of contact and production that will obtain the maximum output from each person. This may be accomplished with the realization that certain individuals with specific training and experience are reassigned in an effort to improve communication.

Instructional personnel may use the data in planning the production of classroom materials by non-instructional personnel. Where the effectiveness of the learning situation depends largely upon the preparation of place and materials to be used, the meaningfulness of the activities is enhanced.

Summary and Conclusions

The study was conducted with 81 non-instructional staff members. The results of the study revealed 1) that the non-instructional personnel were eager to participate in such a study; 2) that a unity of effort in communication was expressed by those interviewed; 3) that the faculty also showed an interest in this area of communication; 4) that the non-instructional staff spend on the average more than 25 percent of their time in person-to-person contact with students; 5) that the non-instructional personnel spend 48.2 percent of their time providing information about the university, 29.5 percent of their time securing information for the university, and 22.2 percent of the time providing information about and securing information for the university.

The results of studies of non-instructional personnel in the area of communication should be made available to all segments of a university – students, faculty, and staff. Further study in this area is needed in order to appraise the quality as well as the quantity of communication in higher education.

APPENDIX A

QUESTIONNAIRE

1. Office of employment ________________________________

2. Position of employment________________________________

3. Number of years employed at Winston-Salem State University ________________

4. On-Job

–Average amount of time per week spent with:

A. Students

Person-to-person	________ hrs.	To provide information	________%
Telephone	________ hrs.	To secure information	________%
No. of letters	________ hrs.	To provide and secure information	________%

B. Faculty

Person-to-person	________ hrs.	To provide information	________%
Telephone	________ hrs.	To secure information	________%
No. of letters	________ hrs.	To provide and secure information	________%

C. Other Non-Instructional Staff Members

Person-to-person	________ hrs.	To provide information	________%
Telephone	________ hrs.	To secure information	________%
No. of letters	________ hrs.	To provide and secure information	________%

D. Community Agencies, Representatives, and Individuals

Person-to-person	________ hrs.	To provide information	________%
Telephone	________ hrs.	To secure information	________%
No. of letters	________ hrs.	To provide and secure information	________%

5. Off-Job

–Evenings and Weekends

Average amount of time spent providing information about the University ________hrs.

Average amount of time spent securing information for the University ________hrs.

RETURN TO:

The Office of Vice President
Room 211, Blair Hall
Winston-Salem State University
Winston-Salem, North Carolina 27102

PERSONAL INTERVIEW ITEMS

1. To what extent do you understand your duties and responsibilities to persons in the other area? Instructional or non-instructional?

2. To what extent are the materials produced in your area used in the instructional program?

3. In the performance of your duties and responsibilities, describe the degree of rapport that exists between the non-instructional and the instructional personnel.

4. To what extent do your duties and responsibilities tie in with the preparation of the physical environment for learning situations?

APPENDIX B

OFFICES INCLUDED IN THE STUDY

Academic Dean, Office of
Admissions Office
Bookstore
Business Office
Data Processing Center
Development Office
Dining Hall
Education Department
Enrichment Center
Guidance and Counseling Department
Infirmary
Library
Maintenance Department
Nursing, School of
Placement Office
Post Office
President's Office
Registrar's Office
Recruitment Office
Scholastic Achievement Office
Student Financial Aid Office
Student Personnel Services
Student Teaching Office
The Switchboard
Vice President's Office

APPENDIX C

POSITIONS INCLUDED IN THE STUDY

Accounting clerks	2
Administrative assistants	2
Admissions director	1
Bookstore manager	1
Bus driver	1
Business manager and assistant	2
Carpenter	1
Cashiers and assistant	3
Clerks	2
Data Processing manager	1
Dean of Men	1
Development Officer	1
Dining Hall supervisors	2
Dormitory supervisors	7
Electrician	1
Fireman	1
Ground foreman	1
Janitor	1
Janitor foreman	1
Key punch operators	2
Library assistants	4
Maids	6
Mechanics	4
Nurse	1
Painter	1
Placement director	1
Plant engineer	1
Plumber	1
Postmaster	1
Receptionist	1
Recruiter	1
Registrar	1
Scholastic Achievement Program Director	1
Secretaries	16
Security officer	1
Supervisor of Buildings and Grounds	1
Student Financial Aid officer	1
Switchboard operators	2
Yardmen	2

COMMUNICATING WITHIN THE INSTITUTION – INSTRUCTIONAL UNITS

COMMUNICATION AND DECISION MAKING IN ACADEMIC DEPARTMENTS

F. Craig Johnson
Florida State University

Recently I had the opportunity to examine two different written reports sent to faculty and administrators at two separate universities. The purpose of each report was to communicate a decision regarding a shift in organizational patterns of academic departments. The first report read in part as follows:

> "The reorganization was meant to simplify the university structure for doctoral programs, to provide for the orderly development and growth of doctoral programs of excellence, and to create an atmosphere in these programs conducive to serious intellectual inquiry. At the same time, organization was provided for the broadest possible base for university-wide participation, and assure the doctoral programs strengthen the undergraduate programs of the college."

From the second institution the following:

> "The chief aim of the proposed restructuring was to simplify the administrative and budget process, to encourage more effective use of faculty and other department and college resources, and to encourage better articulation between undergraduate and graduate programs."

The interesting thing about the rationale for these two reports was that each in almost the same language attempted to justify opposite directions taken by two institutions. The first rationale was used to separate graduate and undergraduate programs in departments, and the second was used to combine graduate and undergraduate programs in departments.

Anyone who has worked with institutional studies and rationale used to support faculty and administration policies will not be surprised to learn that in a study[1] of over 100 departments at 15 different universities the communication variable was not particularly significant as something that could either describe the unique character of a discipline or predict actions of academic departments.

Purpose

The purpose of this paper is to report findings on the relationship of communication and the decision-making process to the operation of university academic departments.

Procedures

Five consultants were sent to 10 major universities where they conducted interviews with chairmen in the Arts and Science departments of mathematics, psychology, history, English, and chemistry. In addition, business and engineering were selected as representative of professional schools and, within those, management and electrical engineering as representative departments. Consultants interviewed each department chairman and appropriate academic deans. Consultants asked each administrator about communication and decision-making processes within departments. Specifically, he asked what means of staff communications were regularly used (bulletin board, weekly or intermittent news sheets, regular staff meetings, word of mouth, secretary or members of the staff)? How effective were these? How frequently were staff meetings held? Who was expected to attend? What constituted a typical agenda? How was the session conducted? What persons were involved and what processes were used in making decisions (or departmental recommendations)? On each of the following points, to what extent were these decisions subject to review and denial at other levels?

1) Recruitment and selection of new faculty
2) Promotions and tenure
3) Salary increases
4) Leaves of absence
5) Authorization of expenditures for travel
6) Authorization of expenditures for supply and equipment
7) Course assignments
8) Teaching load
9) Assignment of office and research space
10) Award of assistantships, fellowships, scholarships
11) Adding new courses
12) Requirements for majors and graduate students
13) New equipment

Was the department a closely knit cohesive unit or was it divided? What was the basis for the division? Which of the following was most descriptive of the operation of this department?

1) Autocratic–dominated by the chairman with a high regard for his perogatives of decision-making authority,
2) Paternalistic–dominated by chairman but with evident concern for the welfare of each and every individual,
3) Oligarchic–run by a few influential members of the department,
4) Bureaucratic–well-(perhaps over-) organized with assignments and specific tasks and responsibilities of individuals and committees with elaborate procedural policies,
5) Democratic–all members of the department involved in the decision-making and formulation of policies and recommendations, or

6) Laizze Faire–little organized, maximal freedom of the individual.

Consultants Reports

A wide variety of departmental communication and decision-making processes were reported. There was a clear distinction between matters relating to the discipline, such as courses and curricula, and institutional personnel matters, such as recruitment, appointment, promotion and tenure. Courses and curriculum were considered a part of the discipline and people a part of the institution. One consultant's description of an oligarchy illustrates this point:

> "While the department head is charged with final responsibility for all matters having to do with the department, and while the form of decision-making through departmental committees appears democratic on paper, evidently the department is run democratically with respect to courses and curricula but is an oligarchy with respect to recruitment, appointment, and tenure. That oligarchy is made up of 4 members of the personnel committee. Nevertheless, the head regards his role as that of chairman of his faculty and would rarely go against the recommendations of this personnel committee."

Consultants encountered departments which were judged to be weak by university administrators and college deans. Often it was found that communication and decision-making, while not a cause of the problem, certainly was a symptom. Consider the following comment:

> "Regular means of department communication are the faculty meeting and departmental memoranda. Faculty meetings are held irregularly and only when sufficient business exists. Individual faculty members sometimes request department meetings if they have something they want to bring up. Attendance at the faculty meetings is rather good and the discussions animated. Points of view are strongly taken but morale appears to be good and final decisions are generally accepted in good spirit by the opposition.
>
> Recruitment of new faculty is done largely by the chairman; though he asks others for suggestions, few respond. Final selection is made by a committee appointed by the dean. It includes several members of the department and a minority membership from outside the department. Promotions and tenure are the responsibility of the dean who acts with the advice of an administrative committee made up of department chairmen. The latter evidently do not solicit help from their department members through committees. Salary increases are determined exclusively by the dean with or without formal consultation and advice depending on his familiarity with the staff member under consideration. The departmental travel budget and supplies and equipment budget are carefully drafted and supervised by the chairman. Allocation of funds for graduate assistantships and fellowships is made by the chairman without consultation. New courses and course requirements are discussed in committees and recommended by the undergraduate and graduate curriculum committee to the department for decision. Faculty members of all ranks vote on curricular course approvals."

Consultants reported a wide variety of means of communication within a department.

> "Regular means of communication included the bulletin board, newsletter, minutes, memoranda, committee reports, and regular staff meetings."

Communication within the department was sometimes characterized as informal, especially in those departments that have a coffee room located in the building or centrally.

Analysis of Reports

In an analysis of these reports the major interest centered around the feedback provided in the communication and decision-making process. The mode of communication gave us very little clue. For example, one department held many faculty meetings and a wide variety of topics were discussed but then junior faculty members were excused, and decisions were made by senior faculty members only. In other departments many committees would meet and communicate but the department chairman would decide all important matters himself. Conversely, some department chairmen met regularly with their faculty on an individual basis or asked for advice in written form and communicated to faculty using memoranda. These departments held very few staff meetings and yet involved faculty widely in the decision-making process. It was our conclusion that the complete lack of communication often indicated that a department was in trouble. Beyond that the amount of communication did not necessarily tell us how faculty were involved in the decision-making process.

Questionnaires

The second part of the investigation concerned the communication questions of **who** says **what** to **whom and with what effect.** Questionnaires were sent out to faculty in the 100 departments studied. We asked how are decisions reached in departments for each of the following?

1) Recruitment
2) Selection of new faculty
3) Promotion and tenure
4) Salary increases
5) Leaves of absence
6) Travel authorization
7) Budget for items for supplies and equipment
8) Teaching assignments
9) Office and research space
10) Awards of assistantships, fellowships and scholarships
11) Recruitment for majors and graduate students

Possible answers include 1) Department chairmen acting within established policy, 2) Department chairmen in consultation with an advisory group, 3) vote of tenured faculty, and 4) vote of all members of departmental staff.

We found most matters were handled by the department chairmen acting within established policy.

In another question we asked, if one of your colleagues needed special consideration to solve the following problems to whom would you recommend he go for assistance?

1) Promotion or tenure action
2) Larger increase in salary
3) A leave of absence
4) Travel expense
5) Change in teaching assignment
6) A change in office or research space
7) Introduction of a new course
8) Money for research and scholarly pursuits
9) Additional graduate students as assistants

The possible choices included:

1) Your dean
2) Your department chairman
3) Certain faculty members in your department
4) A university administrator
5) President or vice president
6) Faculty in another department or institute
7) Chairmen of another department or institute, and
8) Other.

We found here that among the younger faculty members most worked directly with the department chairman; the older faculty members, however, and those who identified themselves with the university more than with the discipline tended to go to deans or academic vice presidents much more often. The young turks were willing to work with department chairmen; but, the old guard, who supposedly had the power in the department, work more directly with the dean. This did not seem to ease the problems of department chairmen.

Summary

One characteristic of both communication and decision-making in academic departments was variety. Department chairmen developed with their dean and faculty an administrative style which was built on direct experience with their discipline and their colleagues at one institution. It was difficult to generalize or predict how departments would arrive at decisions.

Communication was not a strong variable to describe difference or to predict relationships.

Perhaps we expected too much from the data on the communication process and its relationship to decision-making. We had assumed that faculty wanted to be involved in departmental decisions. We found that for the most part the chairman makes most decisions and faculty are content to be informed and go about their business. The number or kind of faculty meetings, the use of memoranda, bulletin boards, etc., did not seem to make any observable difference.

There was some tendency for the organization of departments to be related to the disciplines. Chemistry, history, and psychology departments tended to be more loosely organized while departments in professional schools were more autocratic. One of our consultants offered the opinion that "social scientists don't seem to be able to govern themselves at all."

One wonders whether our university departments, with their faded communication patterns and bland decision-making are not themselves the dated cornerstones of decaying institutions. If our activist students have taught us nothing else in the past decade they have shown us how to be heard. They communicate with bold visual symbols. They build crowd scenes for TV. They "Get To" the establishment with flags and fists and four letter words. Confrontation and protest involve students in real issues, but it is the clash of symbols that universities find disruptive. Maybe future college administrations will have to be symbol players, or, in more academic terms, general semanticists.

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[1] Dressell, Paul L., F. Craig Johnson, Philip M. Marcus. *The Confidence Crisis*, Jossey-Bass Incorporated, San Francisco, 1970. 268 pps.

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AN APPROACH TO THE STUDY OF INSTRUCTIONAL-INSTITUTIONAL OBJECTIVES

William V. Tucker
Briar Cliff College

Colleges and universities throughout the country regularly conduct studies of their objectives. It is widely recognized that identity and purpose is a key issue, and particularly so in church-related higher education. Unlike public institutions, in the private college students and academic programs can be more limited so that total resources and attention can be focused on simple and clearly-defined objectives. In order to arrive at a precise definition of purpose colleges will have to go beyond simple statements of objectives as typically presented in college catalogs and elsewhere. Recognizing many possible approaches to this goal, it is the purpose of this paper to report the methodology and experiences of Briar Cliff College, Sioux City, Iowa.

During 1967-68 the need for study became apparent in various faculty committees. In the preceding four years the college had become coeducational, adopted the three-term curriculum, joined a consortium, tripled enrollment, doubled the physical plant, shifted from a faculty comprised primarily of nuns to over one-half laymen and the students shifted to more commuters from a primarily residential college.

The Faculty Senate received from the newly appointed Academic Dean a recommendation for a complete study of instructional objectives. The Senate referred the design of the study to the Senate Committee on Academic Policies (SCAP) with the Academic Dean as Chairman. SCAP detailed the following reasons for undertaking a study of instructional objectives:

1) To evaluate the three-term curriculum,
2) to develop plans for academic programming in consortium,
3) to examine the curriculum for relevance,
4) to provide in-service growth, participation, and orientation of faculty,
5) to determine needed catalog revisions,
6) to learn any new dimensions in the teaching-learning process under contemporary college conditions, and
7) to provide information to the president and governing board for total reevaluation of institutional objectives.

Various legitimate approaches to the research were examined and Dean Allan Pfnister's suggested procedure was adopted.[1] Specifically, we attempted to describe what was actually being done before moving to a statement of what the college should be doing. The circular nature of curriculum study was recognized. Objectives were seen as being related to and a basis for curriculum evaluation. The curriculum at the same time was seen as providing a basis for examination of objectives. Revised objectives might set new goals and then the procedure would repeat itself.

At the level of each faculty member, course objectives were stated – using Magar's approach on stating behavioral outcomes, as well as providing for the statement of objectives in more general terms.[2] At the department level faculty and students consolidated these objectives, again in both behavioral and general terms. At the divisional level departments further defined their objectives and prepared complete reports.

While the faculty members in the departments were going over their course objectives, several other offices were providing information on student and faculty characteristics. This information was shared throughout the college. Final reports were compiled for the total college by the end of the first year.

At the beginning of the second year selected faculty members and the Academic Dean verbally presented position papers in open forum at the faculty institute. All institute participants were involved in open discussion and rebuttal of the positions taken in the light of the composite reports.

Subsequent to the position papers, in order to establish uniformity among the stated departmental objectives, a committee provided a taxonomic classification of all reported objectives.

The classification followed from the **Taxonomy of Educational Objectives** (both in the Cognitive and Affective Domains).[3, 4] The classification schemes suggested in these Taxonomies are as follows:

AFFECTIVE DOMAIN	COGNITIVE DOMAIN
Receiving (Attending)	Knowledge
Responding (Willing to attend)	Comprehension
Valuing	Application
Organization	Analysis
Characterization by a value or value complex	Synthesis
	Evaluation

The categories of the classification scheme are heirarchical in nature, i.e., all of the lower categories are included in higher categories. Therefore, objectives were classified only once – as high as was indicated by the members of the committee.

Some departments simply compiled the course objectives and submitted these as the departmental objectives. It was intended that the departments would rigorously work over their course objectives and possibly develop larger and more comprehensive objectives at a departmental level which would have had **Gestaltic** characteristics.

Some departments were unrealistic in what was stated as departmental objectives. Errors were undoubtedly made in both directions – too high and too low.

Departments generally neglected reference to the activities of the department which were primarily of service to other departments.

Stated departmental objectives did not seem to adequately address themselves to the function of attracting students.

More objectives were classifiable in the Cognitive domain than in the Affective domain. This was not really surprising because: 1) The design of the study was originally along the lines of stating objectives in behavioral terms; 2) emphasis was

TABLE I

CLASSIFICATION OF OBJECTIVES IN THE AFFECTIVE DOMAIN

Departments	Rec	Res	Val	Org	Char. by Value	Score
Art	0	2	2	1	0	5 – 25%
English	0	0	1	1	0	2 – 18%
M.F.C.L.	0	1	1	1	0	3 – 25%
Music	0	0	0	0	0	0 – 0%
Philosophy	0	0	1	1	0	2 – 33%
Speech & Drama	0	1	1	0	0	2 – 13%
S & B Science	0	0	2	0	0	2 – 33%
Theology	0	1	1	0	2	4 – 44%
Biology	0	0	0	0	0	0 – 0%
Chemistry	0	0	2	2	0	4 – 33%
Math	0	0	4	0	0	4 – 50%
Phy. Education	0	0	1	0	0	1 – 6%
Physics	0	0	2	0	0	2 – 28%
Business	0	0	1	0	0	1 – 20%
Education	0	1	0	3	0	4 – 44.5%
Hs & Pol Sci	0	0	0	1	0	1 – 12.5%
Psychology	2	0	0	0	0	2 – 22%
Sociology	0	0	1	1	1	3 – 28%
Total						42 – 25%

TABLE II

CLASSIFICATION OF OBJECTIVES IN THE COGNITIVE DOMAIN

Departments	Know	Comp	Appl	Anal	Syn	Eval	Score
Art	3	3	2	0	1	3	12 – 70%
English	2	0	3	2	2	0	9 – 81%
M.F.C.L.	1	0	6	2	0	0	9 – 75%
Music	1	1	4	0	1	0	7 – 100%
Philosophy	1	1	1	1	0	0	4 – 66%
Speech & Drama . .	3	0	6	1	0	3	13 – 87%
S. & B. Science . .	2	0	1	1	0	0	4 – 66%
Theology	1	0	1	1	1	1	5 – 56%
Biology	1	1	0	0	0	0	2 – 100%
Chemistry	0	0	4	2	2	0	8 – 66%
Math	0	1	2	0	1	0	4 – 50%
Phy. Education . .	2	1	7	0	1	3	14 – 93%
Physics	1	0	1	1	1	1	5 – 71%
Business	0	2	1	1	0	0	4 – 80%
Education	1	1	2	0	1	0	5 – 55.5%
Hs. & Pol Sci . . .	1	2	1	1	1	1	7 – 87.5%
Psychology	1	1	3	1	1	0	7 – 77%
Sociology	0	0	2	2	2	2	8 – 72%
Total							126 – 75%

typically placed on "knowing" the content of the course; 3) some individuals assumed that a statement of the cognitive dimensions would include the affective dimension. There would be serious questions in my mind as to whether or not this is valid, unless we are aware of our affective objectives. 4) Affective objectives are harder to state and evaluate and there might have been a corresponding reluctance to deal with objectives which were subjective in nature. 5) There were a variable number of objectives reported from and within the various departments. Hence, any kind of quantitative evaluation is hazardous.

The number of departments (18) was a source of strength in some ways but it also pointed up the need for attention to common approaches and appreciation of larger institutional objectives without being primarily true to the discipline area involved.

There appeared to be more courses, in some departments, than were needed for the satisfaction of the objectives stated by the departments.

Generally, the curricular emphasis was on the "application" level of the Cognitive domain and on the "valuing" dimension of the Affective domain.

There were obviously other ways of looking at the data and the classification according to the taxonomic structure was proposed simply as one of several alternatives. One faculty member actually classified the objectives by another useful, but non-rigorous method.

Finally, returning to the stated reasons for undertaking this study: 1) It was concluded that the college would keep the three-term curriculum; 2) we were not moving very rapidly in the area of developing plans for academic programming in consortium; and, 3) the comprehensive objective of examining the curriculum for relevance continues.

Certainly, it is an encouraging fact that students and faculty members have been involved in examining objectives. Several courses have been changed in content; others have been dropped. There has been little tendency to add courses.

Within the past month the total faculty has initiated several curriculum changes which include:

1) No specific course requirements,
2) changed distribution requirements to a minimum of three per division which can be satisfied by examination,
3) the adoption of a seminar program of problems and readings which provides wide latitude to students and faculty members in a portion of the curriculum, and
4) the opportunity to earn advanced college classification by examination. Continuing with the stated reasons for undertaking this study, we have already provided for inservice growth and participation and orientation of faculty members and there is hope that we will continue this active involvement and concern among the faculty.
5) For the present time, needed catalog revisions have been made. As we continue to look at course and distribution requirements and make other changes, it will be necessary to continually revise the college catalog.
6) Relative to new dimensions in the teaching-learning process, this topic should be constantly evaluated. It is difficult to consider this topic without looking simultaneously to item 3 regarding the relevance of the curriculum both in content and in methodology. Clearly, several faculty members have been and continue to be truly innovative and relevant "fellow learners".

Academic departments in future annual reporting are asked to relate their reports to the stated departmental objectives. It is expected that both the reports and the objectives will be re-evaluated regularly.

Late this year the President of the college named a committee of students, faculty members, and administrators to study all of the data available and, in teams, present position papers regarding total institutional objectives. The work of the institutional committee will be completed in September. Meanwhile, a working position paper is included. This partially fulfills objective 7.

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[1] Pfnister, Alan. *North Central News Bulletin,* Vol XXV, No. 4-7, Jan. Feb. March, April, 1966. pp. 24-28, 17-26, 23-28, 23-28.

[2] Magar, Robert F. *Preparing Instructional Objectives,* Palo Alto, California: Fearon Publishers, Inc., 1962.

[3] Bloom, Benjamin S. (ed) *Taxonomy of Educational Objectives,* (Cognitive Domain) New York: David McKay Co., 1956.

[4] Krathwohl, David R., Benjamin S. Bloom, and Bertram B. Masia. *Taxonomy of Educational Objectives,* (Affective Domain), New York: David McKay Co., 1964.

COLLEGE OBJECTIVES
(A working paper)

I. Academically

To maintain distinctly Catholic character, we should provide high quality instruction in both theology and philosophy.

A high quality faculty should be maintained with respect to mastery of disciplines and in learning management.

We should seek the highest accreditation in all of our academic programs.

We should maintain a student body respectable as determined by normative measures with comparable institutions.

A. We should offer the opportunity for persons late to acquire achievement motivation.

We should provide for individual choice and freedom.

A. To the students in their courses and in their major areas of concentration.

B. To all in their methods of learning.

C. By encouraging experimentation and innovation.

We should promote active involvement in the learning process.

A By a freshman program of studies different from high school experiences.

B. The provision for top quality teaching especially for beginning students.

C. Student responsibility for their own learning in teaching-tutoring, internships, work-study, and in course development.

D. The maintenance of small classes to not exceed enrollments of 40 students each.

II. Administratively

All persons in the college community will be actively involved in decision-making and wherever practicable in the conduct of college business.

We will seek to keep the costs to the student at a minimum level and quality of instruction at a maximum level by way of support from foundations, government grants, cooperative consortia arrangements and contributions of services.

III. As a Catholic Institution

We will seek to provide a rich and stimulating liturgical experience.

We will seek to provide institutional leadership in:

A. Liturgical innovation
B. Religious instruction
C. Representation of the "People of God" in their concerns insofar as this activity is intellectually defensible.

We will seek to maintain a Christian learning community.

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CRITICISM OF THE (TUCKER) RESEARCH

Robert J. Morrisey
Briar Cliff College

Criticism of this research focuses first on the stated reasons SCAP gave for the study. All seven reasons have not been pursued and probably only one (7) regarding total reevaluation of institutional objectives should have been stated in this research attempt. This objective then could have been operationalized by stating what information should be provided by whom, in what form, and when.

Ideally the information about objectives would have included divisional objectives and Student Services objectives. The divisional unit did not summarize in this research approach. And, the department of Student Services, as a non-academic unit, was completely overlooked. Also, course objectives should have been stated in terms of behaviors and contents. To the methodologies of Magar, Bloom and Krathwohl, might be added the name of Tyler.[1] [2] [3] [4] Tyler suggests useful categories for this purpose.

Many of the course objectives as they have been stated have not been acceptable. At present, it is not practicable to begin anew, but this fact will complicate the work of the institutional objectives committee. To make these past efforts profitable the cycle we are about to complete the first time should, in the future, be repeated again, and again. As the work is continued individual faculty members might be worked with to identify and correct duplicity in behaviors and content.

A particularly vexing problem for church-affiliated schools is the question of objectives relating to this religious characteristic. Similarly, the Liberal Arts College cannot claim the name by mere exposure to courses. Perhaps this type of study, properly done, can help to solve part of the current identity crisis of church related Liberal Arts Colleges.

To acequately conduct this type of study requires much work with individual faculty members and with groups. The perennial problem is one of lack of staff and budget. This research approach has provided a start and has been valuable to Briar Cliff College. Much information has been gathered and much more has been recognized. Whatever the report that comes from the president and the board, it should be a most useful tool for all aspects of college planning.

Certainly the major problem of this entire study has been the lack of the statement of specific behaviors and content. Faculty members, of course, resist this reduction of their task to simple statements. To the extent that it would be possible to do so an institution might well take on new or renewed direction from the statement of such objectives, their summarization and generalization, and a final ordered priority.

We know that institutional influences are not confined to the academic. Non-teaching staff should also be clear in their objectives and contribute to the determination of institutional objectives. A limitation of this study has come with its initiation in the Dean's office rather than in the President's office.

A final criticism relates to the problem of faculty indifference to this activity. This is to be anticipated in such a study and suggests an assistant for curriculum development or an outside consultant.

Meanwhile, with limited budgets, the study of objectives must be pursued. This approach to instructional – institutional objectives, with all of its shortcomings, might be modified and applied in your institution.

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[1] Magar, Robert F., *Preparing Instructional Objectives*, Palo Alto, California: Fearon Publishers, Inc., 1962.

[2] Bloom, Benjamin S. (ed), *Taxonomy of Educational Objectives*, (Cognitive Domain) New York: David McKay Co., 1956.

[3] Krathwohl, David R., Benjamin S. Bloom, and Bertram B. Masia, *Taxonomy of Educational Objectives*, (Affective Domain), New York: David McKay Co., 1964.

[4] Tyler, Ralph W. *Basic Principles of Curriculum and Instruction*, Chicago: University of Chicago Press, 1950.

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THE INTERIM TERM AFTER SIX YEARS

Jack E. Rossmann
Macalester College

Colleges and universities within the past ten years have experimented with a wide variety of academic calendars. The trimester, 3-3 and 4-1-4 are among those modifications of the standard semester or quarter system which have been introduced to increase opportunities for year around operation, eliminate the "dead period" in January or provide for greater curricular innovation. Of the new approaches perhaps the most viable and most widely adopted calendar has been the 4-1-4 or interim term. Well over one hundred colleges and universities now have in operation some version of this plan.[1]

Soon after its origin at Florida Presbyterian College in the 1960-61 academic year, the interim term concept was adopted at Macalester College. As part of a major curriculum revision the faculty adopted the 4-1-4 calendar to commence during the 1963-64 academic year. From the outset it was decided that the interim term at Macalester would attempt to depart in a significant way from the regular fall and spring terms. Grading would be on an S-U basis only; courses offered during the regular terms could not be taught during the interim term; and there would be an attempt to provide opportunities for independent and off-campus study for those students who desired those options.

Since the interim term was a relatively new phenomenon on the higher education scene in 1963-64 it was felt that data should be collected and an attempt made to assess the success of the interim term as viewed by students and faculty. Thus, since 1964 questionnaire data have been collected from students five times and faculty members four times.[2] The data which follow are based primarily upon the results of the most recent administration of the questionnaires, February of 1969.

Questionnaires were sent to the 130 full-time members of the faculty and a random sample of 400 (20 percent of the student body) students. Responses were received from approximately three-fourths of the faculty and 85 percent of the students. Roughly the same percentage of response has been achieved in each of the years in which questionnaires have been administered.

Results

TABLE 1
Percentage of Students Choosing Various Interim Term Course Options

Interim Course Options	1967	1968	1969	1970
	N=1,800	N=1,769	N=1,897	N=1,877
On-campus faculty-directed group course	71%	60%	66%	57%
On-campus independent study	15	14	12	15
Off-campus faculty-directed group course	5	7	7	10
Off-campus independent study	6	11	7	12
Partially on–partially off-campus course	3	8	7	6

Table 1 indicates the proportion of students who have chosen each of the five basic course options which is available during the interim term over the past four years. Perhaps the most significant trend which can be noted is the increasing use of off-campus study with approximately twice as many students spending at least part of their time off-campus in 1970 as compared with the interim term in 1967.

To what extent do students explore areas outside their major field of interest during the interim term? Tables 2 and 3 present data related to this question based upon the 1969 survey.

TABLE 2
Area In which Interim Term Course Was Taken By Major Field

Area In Which Interim Term Course Was Taken	MAJOR FIELD			
	Fine Arts	Humanities	Natural Sciences	Social/ Behavioral Sciences
	N=34	N=81	N=64	N=139
Fine Arts	73%	7%	3%	9%
Humanities	18	59	16	23
Natural Sciences	––	6	59	9
Social/Behavioral Sciences	9	27	22	60
Total	100	99	100	101

Table 2 indicates that approximately 40 percent of the students majoring in humanities, natural sciences and social-behavioral sciences took their interim course outside their major area. Of the students majoring in the fine arts, however, about three-fourths took their interim course in the fine arts.

TABLE 3
Major Fields of Students Taking Interim Term Courses In Various Academic Areas

Area In Which Interim Term Course Was Taken	MAJOR FIELD				
	Fine Arts	Humanities	Natural Sciences	Social/ Behavioral Sciences	Total
Fine Arts (N=45)	55%	13%	4%	27%	99%
Humanities (N=96)	6	50	10	33	99
Natural Sciences (N=55)	––	9	69	22	100
Social/Behavioral Sciences (N=122)	2	18	11	68	99

Table 3 suggests that of those students taking courses in the natural sciences and social-behavioral sciences during the interim term approximately two-thirds were majors in those areas; whereas, of students taking courses in the fine arts and humanities only half were fine arts and humanities majors. Combining data from Tables 2 and 3 indicates that departments in the fine arts and humanities tend to gain students; whereas, departments in the natural sciences and social-behavioral sciences tend to lose students (in comparison with the number of majors) during the interim term period.

TABLE 4
Extent to Which Faculty and Students Feel Interim Term Objectives Have Been Met

Item	Students N=339		Faculty N=94	
	Own Course	Interim Term In General	Own Course	Interim Course In General
1. The student should have a major voice in determining the manner in which he is to carry on his study.				
Very Adequately	61%	41%	60%	37%
Somewhat	30	56	35	62
Not At All	10	3	5	1
2. Fresh and imaginative approaches to learning will be designed.				
Very Adequately	41	29	42	25
Somewhat	43	66	55	75
Not At All	15	5	4	—
3. Student performance expectations will be rigorous.				
Very Adequately	35	13	33	10
Somewhat	45	69	56	72
Not At All	20	18	11	18
4. Off-campus learning resources will be exploited.				
Very Adequately	40	36	31	37
Somewhat	22	59	27	60
Not At All	38	5	41	3

Four basic objectives were set for the interim term as it was being developed. Table 4 examines the extent to which members of the faculty and the student body feel that these objectives have been met. One of the striking aspects of these data is the similarity between the responses of students and the faculty. Apparently there is no great disagreement between students and faculty as to the effectiveness with which the interim term objectives are being met. A second and perhaps not surprising observation is the tendency for both members of the faculty and students to perceive their own courses as being somewhat better than the situation in general. This is particularly true on the objectives concerned with the extent to which students will be involved in determining the manner of study and in the use of fresh and imaginative approaches to learning. It should be noted here that the opportunity for a student to play a significant role in determining the manner in which he will proceed during the interim term is highly related to his overall satisfaction with his interim term experience.

TABLE 5
Faculty and Student Perceptions of Student Performance During Interim Term

Student Performance During Interim Term	Faculty	Student Himself	Students In General
	N=94	N=339	N=339
Percentage of Students "Catching Fire"	43%*	46%	24%*
Percentage of Students "Performing Adequately"	46	47	46
Percentage of Students "Goofing Off"	11	7	30

*Average of the percentages reported.

Faculty and student perceptions of student performance are examined in Table 5. Both questionnaires asked the respondent to put the percentage of students which he felt performed in each of three categories ("caught fire," "performed adequately," "goofed off"). In addition, the **student** questionnaire asked that he place himself in one of these same three categories. Once again there is a striking similarity between faculty perception of student performance and the way in which the students categorized themselves. When asked about their fellow students, however, the student respondents tended to be much less positive in their responses. There was at least a tendency on the part of the students to suggest that "**I'm** not wasting my time but **they** are."

TABLE 6
Faculty and Student Satisfactions Regarding The Interim Term

Item	Faculty N=94	Students N=339
I feel that this year's Interim Term as an educational venture was:		
Highly successful	23%	26%
Successful	70	66
Not very successful	7	8
A failure	–	–
As compared to a regular term, I find being a student (teacher) during the Interim Term:		
More Enjoyable	58	78
About the Same	34	13
Less Enjoyable	7	9
As compared to a regular term, I find preparation for teaching during the Interim Term is:		
More Difficult	22	
About the Same	58	
Less Difficult	19	
As compared to a regular term, I find motivating students during the Interim Term is:		
More Difficult	44	
About the Same	37	
Less Difficult	19	

Table 6 presents a series of items which were intended to tap general kinds of satisfaction with the interim term. The first item suggests that both students and faculty members saw the interim term as a very successful educational venture and the next item would seem to indicate that students, somewhat more than faculty perhaps, find the interim term to be a very enjoyable experience. Faculty members seem to find preparation for the interim term no more nor less difficult than preparation for a course in the regular term but do tend to feel that motivating students is somewhat more difficult during the interim term.

TABLE 7

Student Responses to Question: "As compared to the Fall Term, did you spend more, less, or approximately the same amount of time on the following activities?"

N=339

Activity	More	About the Same	Less	Never Do This
1. Talking to other students	62%	26%	10%	–%
2. Non-course-related reading	53	28	15	3
3. Sleeping	45	35	19	–
4. Dating	34	42	14	9
5. Course-related reading	33	31	35	–
6. Attending movies	33	43	18	6
7. Playing cards	27	19	10	43
8. Painting, sculpting, playing musical instruments	23	22	13	42
9. Going to the library	23	32	39	5
10. Course-related writing	23	32	40	5
11. Drinking	22	36	12	29
12. Attending plays	22	40	21	17
13. Attending lectures	21	48	25	6
14. Working out at the gym	21	22	20	37
15. Attending concerts	20	41	17	22
16. Knitting or sewing	17	9	10	64
17. Working (for money) off campus	15	16	13	57
18. Working (for money) on campus	11	15	24	50
19. Volunteer work	10	25	17	48

Table 7 measures the extent to which behaviors engaged in during the interim term may differ from those behaviors during a regular term. The responses to these items would seem to suggest that the interim term is a time with considerably less academic pressure than during a regular term. Students find more time for talking, non-course related reading, sleeping, dating, attending movies, etc. One student summarized his feelings about the interim term in the following manner, "Interim can be anything you want it to be ... best of all, interim is not as heavily academic as the regular terms. I'd almost forgotten what it is like to have time on your hands. I don't think that time was wasted. I used it to read, go to movies, hear concerts, etc. There was even time to sit and talk and get acquainted. There probably are a lot of imperfections in interim term, but I'll never call it an ill-used month. I think it's great."

TABLE 8
Student Description of the Interim Term Using A Semantic Differential Format

"Please react to the Interim Term by circling the "X" between the adjectives at the point which best describes your feeling about Interim."

Exciting	X	X	X	X	X	**Boring**
	24%	52%	19%	4%	2%	
Bad	X	X	X	X	X	**Good**
	–	3	10	37	50	
Pleasant	X	X	X	X	X	**Unpleasant**
	49	33	13	4	1	
Easy	X	X	X	X	X	**Difficult**
	6	23	42	23	7	

Table 8 uses a semantic differential to arrive at a student description of the interim term. Responses to these items indicate that students perceive the interim term as being exciting, good, pleasant, and at some midpoint between being easy and difficult.

TABLE 9
Student Satisfaction With the Interim Term By Sex and Class

This year's Interim Term as an intellectual and educational experience was for me:	Men N=173	Women N=165	Fr. N=111	So. N=87	Jr. N=71	Sr. N=69
Extremely rewarding	24%	34%	23%	29%	35%	32%
More than usually rewarding	40	38	45	34	35	41
All right	25	21	23	25	18	23
Not very rewarding	7	5	7	9	6	3
Disappointing and of little value	3	2	1	2	6	1

Total	1969 N=338	1967 N=240	1966 N=361	1965 N=363	1964 N=703
Extremely rewarding	29%	31%	34%	20%	39%
More than usually rewarding	39	34	38	42	35
All right	23	27	22	28	19
Not very rewarding	6	6	3	7	4
Disappointing and of little value	2	1	2	3	3

The final table (9) looks at global student satisfaction with the interim term by sex and class for the 1969 respondents, and then compares the 1969 responses to the responses of 1967, 1966, 1965, and 1964. Three observations may be made from this table. First, women appear to be slightly more satisfied with the interim term than men are. A possible explanation for this involves academic achievement level. At Macalester, as at most schools, women have higher average GPA's than do men and data collected earlier (regarding interim term) indicated that students with higher GPA's appear to be somewhat more satisfied with the interim term.

A second observation deals with the trend toward increasing satisfaction as a student moves through his experience at Macalester. In other words, freshmen are somewhat less satisfied than are juniors and seniors. This may be related to the greater use of the independent study option by upper class students or the dissatisfied may leave before they are upperclassmen.

A final observation deals with the longitudinal satisfaction with the interim term at Macalester. A comparision of the responses on this item over the six year period in which data have been collected indicates high stability in overall satisfaction with the interim term period at Macalester.

Has the interim term had any general impact on the college? In an era when rapid change is occurring in the environment of higher education it is extremely difficult to impute cause and effect. But of the many changes which have occurred at Macalester during the past three or four years at least three may be related to the interim term experience.

1. Each student has the option of taking at least one course each term on an S-U basis and can also remove from his official transcript any course (and the associated credit) in which he is not satisfied with his performance.
2. The faculty, during the 1969-70 academic year, adopted a new curricular program which eliminates all requirements except minimal course distribution among the three major academic areas of the college and requirements set by the department in which the student is majoring.
3. Two-thirds of the faculty respondents to the 1969 questionnaire said they have adopted things tried during the interim term in their regular term courses. To quote two responses, "Students assume more responsibility in planning the course." "Taught me that the student must formulate for himself the questions to which course readings, lectures, and discussions provide the answers."

As with most new ideas the interim term has proven to be neither all good nor all bad, but at Macalester the balance appears heavily weighted on the positive side.

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[1] Jack L. Armstrong. An interim term digest. St. Paul, Minnesota: Macalester College, 1969.

[2] An early evaluation of Macalester's interim term was published in the December, 1967 issue of *Liberal Education*. pps. 540-547.

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A SYSTEMS APPROACH TO CURRICULUM PLANNING AND REVIEW

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The technique which is discussed in this brief paper is an approach to curriculum planning and/or review from the viewpoint of maintaining a perspective or overview of the curriculum under study to other curricula of a similar nature while allowing a critical examination of the individual curriculum elements. Past approaches dealing with curriculum planning have usually emphasized the "Outward Look" approach where the curriculum to be designed or reviewed would take into consideration overall goals and objectives but did not deal specifically with the curriculum structural elements. Therefore, the technique developed represents an attempt to provide an "Inward Look" to a curriculum, the micro-structure, insuring that the curriculum elements are consistent with the goals and objectives. Additionally, the technique described is readily adaptable to computer manipulation of the data involved which allows for rapid curriculum design changes for experimental purposes.

The approach to curriculum review/planning to be discussed was developed in response to a need by the graduate program in Health Administration at the University of Colorado School of Medicine for a critical review procedure to examine a newly developed curriculum. An evaluation of the curriculum was desired in terms of its relevance to the stated goals and objectives and its apparent strengths or weaknesses compared to existing traditional programs in the field. A preliminary review of the literature dealing with curriculum review/planning revealed that existing techniques, while valuable in determining gross characteristics, would not yield the detailed information required for the study. As a result, a technique was developed which incorporates a systems approach to curriculum review. The approach that was developed is quite basic, logical, and easy to understand, but also is expandable to more esoteric methods of analysis and control.

The steps in the systematic way of examining curricula, whether for review or planning purposes can be described as follows:

1) The essential topical areas within the curriculum under study are defined as mutually exclusive subsets of the curriculum.
2) An assessment of similar curricula from representative samples of programs making such offerings is undertaken by obtaining program descriptions and course content descriptions.
3) Each individual program offering the curriculum under study is analyzed by assigning individual courses within the program to the pre-determined topical areas defined in step 1.
4) For each program, the number of credit-hours in each topical area is aggregated and the total program credit-hours calculated.
5) The proportion of credit-hours in each topical area is calculated as the ratio: (aggregated credit-hours in each topical area)/(total program credit-hours).
6) When steps 3), 4), and 5) are completed for all programs to be included in the study, the average percent concentration in each topical area is then calculated.

Upon completion of steps one through six, one of two paths may be selected for further analysis depending upon whether a new curriculum is being planned or an existing one is being reviewed. In the case of planning and design of a new curriculum, the new step is to translate the percent concentration in the various topical areas into the number of credit-hours desirable consistent with the total number of credit-hours desired in the entire program. Then the sequence of courses in each topical area would be constructed including course outlines describing the elements to be contained in each course. Next, the elements contained within each course would be mapped out relative to all courses and compared for overlap of content. Once a visual or machine comparison of the elements in each sequence is made, overlap eliminated, the final curriculum plan would be ready for further critical review and ultimate approval and implementation. The procedure for review of existing curriculum follows the same steps except that initially the existing curriculum is analyzed with regard to course content by topical area and compared with the overall average of all programs surveyed. The deviation of the curriculum under review from the average of all similar programs is then justified in terms of the program's uniqueness or philosophy or modified to align it more closely with the general program or accreditation criteria. Then steps one through six are repeated.

As may easily be observed, there are two factors which influence the results of the approach to curriculum planning/review. First, the definition of topical areas is of critical importance. The combination of topical areas must be inclusive of all subject matter contained within all programs while each topical area must be mutually exclusive subsets of the curriculum. In addition, the number of topical areas should be large enough to clearly differentiate each area while small enough to make the ultimate categorization and comparisons meaningful from an analytical point of view. (It is suggested that the number of topical areas be no less than five nor more than ten based upon the experience of this study.) Second, the decision to place individual courses in each topical area is a subjective judgement which is arrived at by examining the course content in detail. To insure a realistic alignment of courses within topical areas, it is recommended that the same investigator assume the responsibility for all details of this portion of the analysis. As a result, the bias will then be somewhat consistent and meaningful comparisons can be made. It might be noted at this point that appropriate program accreditation criteria may be used as a guide to determine the importance of individual curriculum topical areas as well as a comparative measure.

The basic results and information which can be expected from a typical application of this technique is best illustrated by sample data extracted from an actual application of the technique. As noted earlier, this technique was utilized in a study of a graduate level (M.S.) program in Health Administration. Five topical areas were defined within the curriculum and steps two through six in the methodology described were completed. By way of illustration, Figure 1 shows the tabulation of this information. To measure the difference between this particular curriculum and the averages of all other similar curricula, a skyline chart was constructed which appears as Figure 2. The skyline chart is essentially a presentation of the deviation of the curriculum under study from similar curricula, such deviation justified in terms of uniqueness or philosophy of the particular curriculum program. Significant departures noted on the skyline chart are signals which would prompt further investigation in a particular topical area to justify a difference or might indicate that changes are required to more closely align the curriculum to certain goals or objectives.

COURSE CONTENT BY FIELD

TIME SCHEDULE FOR DEGREE

S = Semester
Q = Quarter
☒ = Residency

SCHOOL	GENERAL ADMINISTRATION	HEALTH ADMINISTRATION	HEALTH CARE ASPECTS (S-E-P)[1]	QUANTITATIVE METHODS	ELECTIVES[2]	RESIDENCY	THESIS, PAPER, REPORT, ESSAY	DEGREE CONCERNED	TIME SCHEDULE FOR DEGREE
1		.61			.39	12 mo.	T	M.S. Hosp. Admin	S_1 S_2 ☒
2	.46	.077	.154	.308		12 mo.		Master of Hosp. Admin	S_1 S_2 ☒
3		.592	.362	.055	.018	12 mo.		M.S. Hosp. Admin	Q_1 Q_2 Q_3 ☒
4		.375	.292	.083	.250	9 mo.		M.P.H. Hosp. Admin	Q_1 Q_2 Q_3 ☒ Q_6
5	.50	.20	.10	.15	.05	Hosp Surv	P	M.B.A. Hosp. Admin	Q_1 Q_2 Q_3 ☒ Q_4 Q_5 Q_6
6	.205	.154	.192	.115	.334	Summer Field, Study		M.S. Health Ad	☒
	.35	.30	.05	.15	.15	Summer 3 mo.		M.B.A. Health Admin	S_1 S_2 ☒ S_3 S_4
16	.05	.484	.183	.15	.133	Summer Tutorial		M.P.H. Health Services & Hosp. Admin	S_1 S_2 ☒ S_3 S_4
17		.70			.30	1300 hrs.		Master of Hosp. Admin	S_1 S_2 ☒
18	.40	.50			.10	12 mo.		Master of Hosp. Admin	S_1 S_2 ☒
19	.133	.666	.10	.10		Summer + 5 mo.	E	M.P.H. Hosp. Admin	S_1 S_2 ☒ S_3
AVERAGE COURSE CONTENT	.218	.442	.105	.080	.155				

Figure 1
Program Comparison

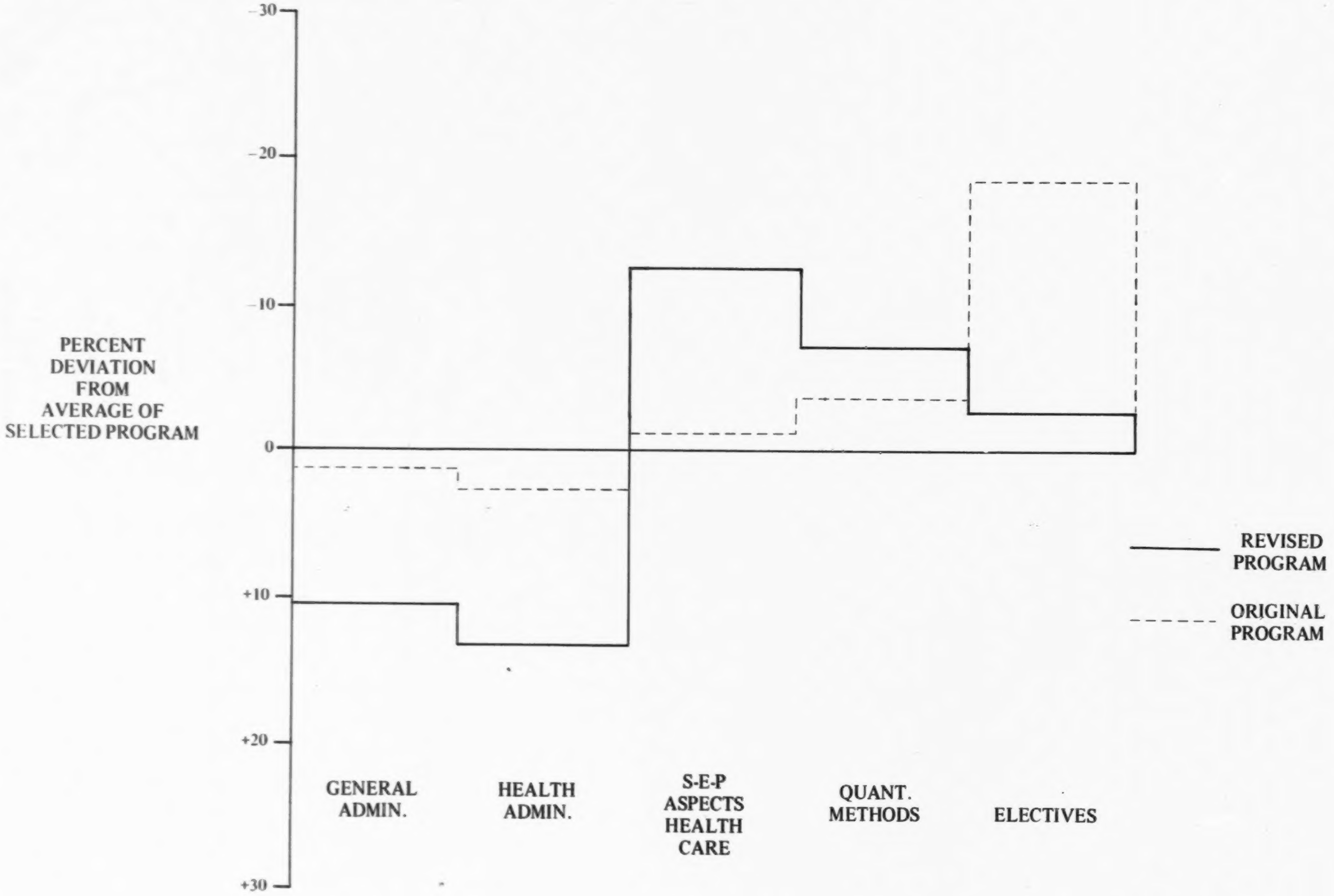

Figure 2
Skyline Chart

In this particular study certain changes in the curriculum were indicated. To maintain a degree of perspective, the original curriculum elements were mapped out in a network diagram as partially shown in Figure 3. Since the divergent views of faculty members, accreditation standards, institutional rules and regulations, need to be considered in any changes in a curriculum, it was found necessary to inspect the detailed curriculum elements on an interactive basis with all faculty members of the particular program participating actively. As a result, a mapping of detailed curriculum elements beyond the course level dealing with elements of knowledge to be conveyed during each week of the program was undertaken. Sample results of such an activity are shown in Figure 4. During this phase of the curriculum review, each course element was transformed into a punched card format and processed by a simple computer program to yield a map of course elements for the entire program with time represented as the dependent variable. This procedure resulted in two major benefits: 1) It displayed overlaps in course content allowing for significant revisions and savings in terms of teaching effort, and 2) it allowed faculty members to be more perceptive in relating their individual areas of responsibility to the overall curriculum.

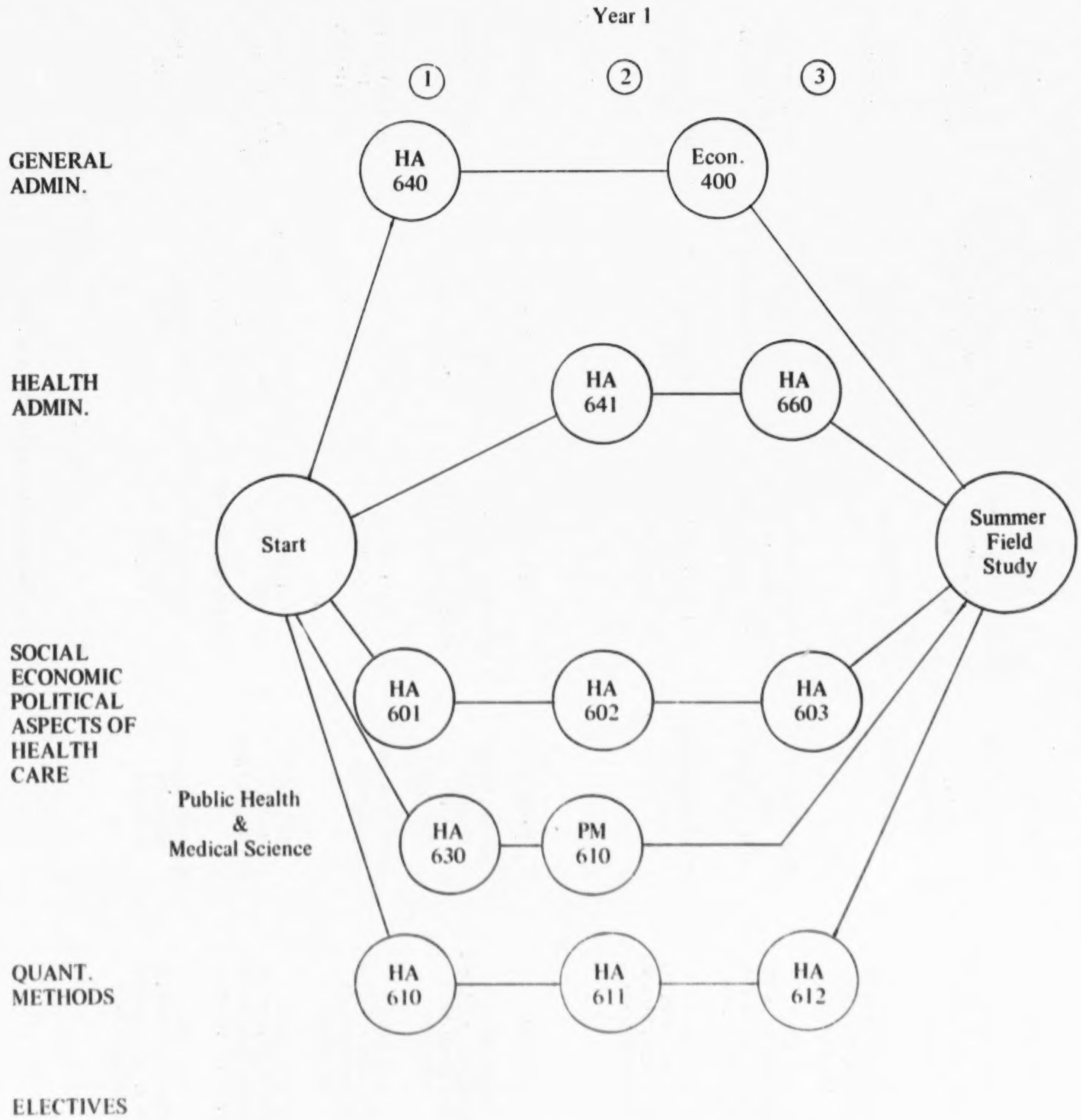
Year 1
①
②
③
GENERAL ADMIN.
HA 640
Econ. 400
HEALTH ADMIN.
HA 641
HA 660
Start
Summer Field Study
SOCIAL ECONOMIC POLITICAL ASPECTS OF HEALTH CARE
HA 601
HA 602
HA 603
Public Health & Medical Science
HA 630
PM 610
QUANT. METHODS
HA 610
HA 611
HA 612
ELECTIVES

Figure 3
Sample Network Diagram

DEGREE PROGRAM – MASTER OF SCIENCE IN HEALTH ADMINISTRATION – YEAR 1 – QUARTER 1

COURSE	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5
H.A. 601-3 THE SOCIAL ECOLOGY OF COMMUNITY HEALTH	INTRODUCTION TO SOCIAL SCIENCES	CULTURE CHANGE IN WORLD PERSPECTIVE	CULTURE CHANGE IN CONTEMPORARY UNITED STATES	THE EXPLODING METROPOLIS	THE SOCIOLOGY OF ILLNESS
H.A. 601-3 INTRODUCTION TO QUANTITATIVE METHODS	INTRODUCTION	ALGEBRA	LINEAR SYSTEMS	MATRIX ALGEBRA	INTRODUCTION TO CALCULUS
H.A. 640-3 INTRODUCTION TO ADMIN. THEORY IN HEALTH ADMIN.	THE MANAGER AND BEHAVIORAL SCIENCE	CONCEPTUAL FOUNDATIONS OF ORGANIZATIONAL BEHAVIOR	THE INDIVIDUAL IN THE ORGANIZATION	THE IMPACT OF FORMAL ORGANIZATION	THE IMPACT OF INFORMAL ORGANIZATION
H.A. 630-3 INTRODUCTION TO PUBLIC HEALTH AND EPIDEMIOLOGY	INTRODUCTION	PHILOSOPHY AND HISTORY	COMMUNICABLE DISEASES	QUARANTINABLE DISEASES	CHRONIC/SILENT INFECTIOUS DISEASES

COURSE	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10
H.A. 601-3 THE SOCIAL ECOLOGY OF COMMUNITY HEALTH	COPING WITH ILLNESS AND DISEASE	SOCIO-CULTURAL HISTORY OF AMERICAN HEALTH CARE SYSTEM	SOCIOLOGY OF HEALTH PROFESSIONS	THE THERAPEUTIC SETTING	URBANIZATION AND SUBURBANIZATION
H.A. 610-3 INTRODUCTION TO QUANTITATIVE METHODS	DIFFERENTIAL CALCULUS	INTEGRAL CALCULUS	INTRODUCTION TO STATISTICS	INTRODUCTION TO STATISTICS	INTRODUCTION TO STATISTICS
H.A. 640-3 INTRODUCTION TO ADMIN. THEORY IN HEALTH ADMIN.	CONFLICT IN THE ORGANIZATION	POLITICAL BEHAVIOR IN ORGANIZATIONS	MANAGING/CHANGING ORGANIZATIONS BY DIRECT INFLUENCE	INFLUENCING BEHAVIOR THROUGH POLITICAL ACTION	MANAGING/CHANGING ORGANIZATIONS BY MODIFYING STRUCTURE
H.A. 630-3 INTRODUCTION TO PUBLIC HEAISEASES EPIDEMIOLOGY	ENVIRONMENTAL HEALTH HUNGER	INDUSTRY RELATED HUNGER	POPULATION AND	POPULATION AND	MENTAL HEALTH

Figure 4

Sample Curriculum Element Map

The resulting value to educators of the technique described in this paper is to put the problem of curriculum planning/review in a framework which allows for new insights into the curriculum at an elemental level in order to gain overall efficiency in programs. The approach is not so theoretical that it cannot be implemented, but rather, involves a logical systematic technique which can be used in its present form or embellished with sophisticated computer techniques or management science techniques. For example, if a common taxonomy of academic disciplines were extended to the course level and beyond to the elemental knowledge level, potentially the overlap of curriculum elements could be determined by computer techniques. The network diagram of the course/curriculum elements could be further analyzed using the Critical Path Method or similar Management Science network technique. The real value of this technique, however, lies in the action of performing the analysis by faculty group effort which then leads to a coherent program and program perspective. In addition, once the analysis is performed it is easily up dated by annual inspection of course outlines and can then serve as a control mechanism to avoid an inadvertant change in program direction.

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SUPPLY AND DEMAND FOR ACADEMIC STAFF IN ONTARIO UNIVERSITIES

Bertrand L. Hansen
Committee of Presidents of Universities of Ontario

The Universites of Ontario have experienced considerable growing pains in the past decade. Full-time student population has grown from about 44,000 in 1964-65 to 100,000 in 1969-70. Graduate student population has grown from 5,400 to 11,400 during the same period but the output of students with graduate degrees that would qualify them for university teaching has been far less than the demand – particularly in the social sciences and humanities. During this same period, academic staff numbers have grown from about 3,200 to 7,900. Several new universities were created in the process of meeting the demands for higher education in Ontario.

Universities have tapped many foreign as well as domestic sources of supply for qualified university teachers. American and British professors have found ready acceptance of their services in Ontario universities so that student/staff ratios and quality would not deteriorate. About 30 percent of the total staff in Ontario universities are citizens of the U. S. or other commonwealth countries.

The situation now is that financing levels are being squeezed and universities are reacting by not hiring as many professors as they have in the past several years. Supply is now outpacing the reduced demand and highly qualified students with graduate degrees may not find teaching posts. Coincident with this is an increased desire by Canadian citizens for a distinct Canadian identity and culture. Some persons most interested in bringing this about are bringing pressure to bear on the Canadian universities for the rather substantial numbers of non-Canadian faculty. The dilemma is how to collect sensitive data and create an effective information communication and storage system on supply and demand of university faculty so that qualified Canadians will find places in Canadian university posts.

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COMMUNICATION CONCERNING STUDENTS

STUDENTS AND THE INSTITUTIONAL RESEARCHER

Jim Sutton, Graduate Student
University of Iowa

Harry Allen has posed this question for me: What information do students need in order to participate effectively in the decision-making process? I am planning to take him at his word by assuming that he means more by "participating" than administrators usually mean when they speak about student input in governance. Administrators inevitably view "participation" as one of many flavors of public relations which a university can concoct to assure the public that all is well within the hoary walls of academia. "Participation" is a way of insuring that the proper semblence of democracy has been attached to decisions which have been made in a highly autocratic manner. It is also a way of suggesting that students are being trained in the mechanics of democracy so that they will understand the responsibilities of citizenship.

Students, today, mean something quite different when they speak about "participating" in governance. Participation implies real power, including the power to initiate and veto administrative actions. Students are becoming more and more inclined to view their interest as a class interest which they must protect and promote in council and in the streets. The student interest is obtaining the best possible education at the least possible cost. Student power is merely the power of students to obtain the best possible education at the lowest cost. What I would like to develop in this paper is an instance when the student interest comes into conflict with the institutional interest of the university, and the role of the institutional researcher in such a situation.

Let us suppose that the administration of a midwest multiversity has decided to raise tuition 50 percent. For the sake of form, it presents its proposal to the appropriate faculty-student committee for ratification. The appropriate administrators are on hand and the expected data is offered to the committee: Inflation, cost of labor up, cost of construction up, cost of money up, etc. The administration asks that the proposal be approved.

One possibility, of course, is that the proposal will be approved without detailed discussion. The committee members simply do not have the data or the ideas to challenge the data which is presented to them or to request information which has not been presented. (I should like to point out that, when this occurred on one campus, it occasioned a week-long student strike in protest.) Unfortunately, this sort of response would seem to indicate that the need to develop specialized data for decision-making in complex institutions is opposed to today's prevailing demand for increased participation in governance. How can more persons participate effectively in governance when fewer and fewer persons control development, access, and utilization of information which is prerequisite to rational decision-making?

Let me suggest one solution to this problem in an alternate scenerio at Midwest Multiversity's meeting of the Tuition and Fees Faculty-student Committee. One student on the committee is savey to institutional research, or at least to common sense. When the administration asks for its proposal to be approved, the student poses a few modest questions of his own.

1) What are university priorities as expressed in actual (as opposed to stated) allocation of resources?
2) What is the average faculty salary by rank?
3) What is the average faculty teaching load in contact hours by rank?
4) What percentage of classroom hours by college, department, and division is taught by teaching assistants?
5) Are teaching assistants getting a raise as a result of the increase in tuition? How does this compare with their increased cost of tuition in dollars? In percent? How does the increase compare with the rise in the cost of living? How many graduate teaching assistants are on food stamps?
6) What is the faculty salary increase by rank in dollars and percent as a result of the tuition increase? How does this compare with the increase for teaching assistants?
7) What is the total sum budgeted for student financial aid? What is the proposed increase in dollars and percent as a result of the tuition increase? How does this compare with other public institutions and private institutions in dollars per capita?
8) Why is the budget so confusing? Why are "research" and "instruction" on one budget line?

This is the point where the staff researcher explains that he doesn't have the information because:

1) He is part-time.
2) He has no budget.
3) No one ever asked for the data before.
4) The data is too expensive to generate.
5) He doesn't know how to go about assembling the data (i.e. he has the data, but is unwilling to divulge it).

And this is the point that our student concludes:

1) The institutional researcher is incompetent. How can he know a tuition increase is necessary if he hasn't measured inputs and outputs or questioned internal allocations and priorities?
2) The data man is trying to help the administration put one over on the students and the public.

In disgust, students decide to appropriate a part of their budget to hire high level graduate students to conduct research on the university. In the course of their research, students discover:

1) That teaching assistants are conducting over 60 percent of all classroom undergraduate hours, 70 percent in the lower division.
2) That teaching assistants are receiving a 5 percent salary increase while being obliged to pay 100 percent more tuition, not to mention the cost of inflation.
3) That the university makes money on its undergraduates by charging them for full-price labor, but providing cut-rate labor.
4) That the profit generated in this way is used to provide full-time faculty with research leisure.
5) That the full professor teaches 5½ hours per week in graduate instruction only.
6) That the administration is asking undergraduates to pay 50 percent more tuition in order **not** to be taught by faculty members.
7) That "preserving faculty quality" means hiring a man of national reputation to teach 5½ hours of graduate instruction @ $15,000-25,000 per year so that he will have the leisure to improve his reputation and therefore the status of the institution; that "preserving faculty quality" is not synonymous with "preserving teaching quality."
8) That the priorities of the institution are:
    A) Generating information (Research).
    B) Providing input to government and state programs (Service).
    C) Producing graduates (Teaching).
9) That in the face of these priorities, the student is evidently not receiving the best possible education at the least cost.

The student researchers recommend:

1) That the university be sued for violation of a fiduciary relationship between students and administrators for the mis-feasance of undergraduate fees in support of graduate programs.
2) That the deans of the local conference be sued for conspiracy to violate the Serman Act by meeting to fix teaching assistant and faculty salaries.
3) That, since $20,000,000 in treble damages are involved, it shouldn't be too difficult to get a high-powered Washington lawyer on a contingency basis.

From my little scenario, I believe that you can deduce a theme: The way to insure that students (and faculty) have adequate information to participate in decision-making is:

1) Give them the information you have, and are willing to let them have.
2) Give them information you have, and are unwilling to share.
3) Develop the information you've refrained from developing because you knew if you had it someone would use it.
4) Encourage interested students and faculty to develop their own data, and offer your advice.

How institutional researchers respond to this suggestion that they become devil's advocates will depend, I suppose, on what they are and on how they view the university. Those who consider themselves personnel of a corporate body are far too likely to be insecure in their positions to allow them to violate the cannons of bureaucracy on the monopoly of information. These are likely to claim that "there is too much democracy" in the university as it is, and there probably is too much democracy at the moment to permit the institution to conform to their expectations easily.

Others, I suppose, may still believe that business about the free flow of information being the soul of a community of scholars. I doubt there are many. But, in any case, I believe that there can be no effective participation in the governance of complex institutions in the future unless those who develop information become devil's advocates and are permitted to play this role with impunity for the sake of the health of the corporate body, as well as the community of minds.

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A GRADUATE STUDENT'S VIEW OF CAMPUS UNREST

William F. Lasher
University of Michigan

Approximately 18 months ago, I was asked to serve on a panel of students – undergraduates and graduate – to discuss, with a group of laymen, what was then happening on campuses throughout the nation. I reported to them some findings from research done by Keniston, Peterson, Korn and others including the statement that activists were in the minority and the great majority of students were doing what was expected of them. The laymen were "glad to hear that."

However, after the events of the past few months and especially the last two weeks, I am not sure that the previous statement is still correct. The invasion of Cambodia and the Kent State shootings have aroused many more individuals to action. As a result we hear of instances, as in New York City, where student demonstrators and helmeted construction workers openly battle in the streets. It now seems as if our entire society is polarized on this great issue and few people, if any, remain in the middle.

Students reject what they feel is an outdated foreign policy which suggests that this country must police the world, fighting communism at its every point of expansion. They reject the concept of "America, my country, right or wrong." Most of all, they are willing to demonstrate, march and even go to jail, in some cases, to show their feelings.

At present, over 200 colleges and universities are actually shut down, either as a result of extremely effective student strikes or by order of college or government officials. This situation in American higher education is different from the moratoriums and the more limited strikes which we have experienced in the recent past. By a moratorium I refer to the short term stoppage of normal activities which have occurred on many campuses in order that students, faculty, and staff members might turn their full attentions to discussions of certain important issues. This type of activity is, I believe, completely justifiable. In fact, it is widely held that during these periods, more education occurs than normal and that which does occur has greater relevancy for the participants.

More recently the student strike has also come into vogue. Institutional activity, while not totally curtailed, has been limited by picket lines, by some disruption, and by the normative attitudes which accompany strikes. Activists have continued to use this tactic, I think, for one very important reason. Success! Psychologists know that if certain behaviors are reinforced in human beings and other animals, these behaviors will tend to re-occur. I believe this is what is happening on a large scale in this instance.

Limited strikes and moratoriums are nevertheless much less far reaching in their scope than are total shut-downs. As implied earlier, we have not often experienced this phenomenon in the history of American higher education. It is unfortunate that campuses are now rendered inoperative because of violence and/or threats of violence.

Many fundamental changes in the philosophy of the university have been called for. Some say the years of great quantitative growth, which we have been experiencing since World War II, are over and the university must begin to grow qualitatively and reform itself internally. Others say the university must speak out on the important issues of the day such as Vietnam, increased military spending, and poverty. Still others say the university must open itself up to the masses and provide new programs, especially in the areas of Black enrollments and Black studies.

If we view the academic organization as an open social system, then it should be able to adapt to internal and external environmental influences in order to properly maintain itself. Unfortunately, in many instances at present, change seems to be resulting from coercion, violence, and irrationality rather than from a process of rational problem solving. Administrators who would ordinarily choose to deal with issues logically find it difficult, if not impossible, to deal with the extreme pressure of irrationality.

What we have then is an institution based on rational thought and processes which is being challenged by irrationality. Since many of the asked for or demanded changes are legitimate and needed, it is unfortunate that we in higher education cannot find ways to deal with them through more logical, flexible, and peaceful means.

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SOME GENERAL VIEWS ON THE UNDERLYING CAUSES OF STUDENT DISTURBANCES

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Wayne State University

The establishment, the silent majority of today, is leaving a legacy which the young people refuse to accept. This legacy consists of two parts. First is an emphasis on materialistic wealth. Second is an emphasis on defense preparedness. The first of these elements is a natural evolution growing out of the depression of the thirties. During this period of time, want and need were the most important factors governing an individual's life. It's only natural that those individuals going through this period of time would want to see to it that these conditions did not exist again and that there would be no repeat of the conditions existing during the great depression. Consequently, an emphasis on one's vocation and an emphasis on goods and materials were formed. This emphasis is not shared by the young people of today because they have not gone through this same set of circumstances. It's probably only true in the United States that there is such an emphasis on materialistic wealth and particularly on the position that an individual holds in his occupation. A person actually considers himself an engineer or a doctor rather than a person engaged in these occupations. The young people refuse to share this need for materialistic wealth. They have not experienced the conditions producing this need and consequently cannot be sympathetic with it.

The second major point in history that determines the defense preparedness which our current generation experiences was December, 1941, Pearl Harbor. Our generation decided that we would not go through a state of unpreparedness again as we did at Pearl Harbor. Yet the young people can look around today and see nothing for the last fifteen or twenty years from the cessation of the second World War but small wars, cold wars, and additional conflicts which are taking America's lives, resources, and a great deal of its moral fortitude.

It is only natural that students would focus their dissatisfaction with this legacy on something with which they are familiar, the college or university. The university has always mirrored the needs and wants and difficulties of society. Some authors have indicated that a university must have a stake in its society for it exists in the society and if the society is healthy so will be the university. If the society dies, so will the university. We should give support to the students who wish to see a change in our society for there are many things that are wrong. On the other hand, the disturbances caused by the conditions in society make an excellent environment for those few rebels, revolutionaries, who would destroy everything and not know exactly what to substitute in the place of current institutions.

Perhaps one of the contributions which Institutional Research can make to this cause is to separate the true revolutionaries from the concerned students who are looking for a change in their environment. We could present to the external world the fact that it is only a very few of these students who are in fact revolutionary to the point of wishing to overthrow the government and destroy the very institutions of which they are a part. On the other hand we would show the external world that there are truly a great number of concerned students, concerned about this legacy which they are getting ready to inherit, and concerned about changing the conditions that produced this legacy.

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CONTRASTS AND SIMILARITIES OF STUDENT UNREST IN THE U. S. AND JAPAN

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University of Washington

Starting on Monday, May 4, American students have reacted to the President's decision to send troops into Cambodia. These reactions were generally loud but peaceful. The academic community, indeed, the nation and the world were shocked to learn that four youths became victims of the anti-war agitation.

Unfortunately, the indicents following the Cambodia affair bring the issues presented in this paper closer to home. With few exceptions, disruption of pre-Cambodia American campuses had not resulted in fatalities. Explosive violence, as seen in Latin America and Japan, is no longer something "out there."

While the May, 1968 Paris convolution represented the peak of student rebellion on a world-wide scale, it was but a forerunner of things to come in Japan. To understand some of the reasons for the student demonstrations in Japan (the Japanese term is "demo"), one must understand some of the bases of contention.

Modern Japanese higher education really began in the late 19th century with the establishment of the University of Tokyo. The Japanese national university system sprang from these roots and now consists of more than 70 campuses. The national universities were modeled after the German system with professorial chairs, stringent entrance requirements, non-mandatory class attendance, etc. To this day the national universities retain extremely demanding criteria for entrance.

Prefectural universities have developed relatively recently. These are similar to state universities in the United States. There are now approximately two dozen prefectural institutions. Here again, the entrance requirements tend to be stringent.

Municipal universities are also late-comers to the Japanese higher education scene. There are about a dozen of them in full operation and their entrance requirements are comparable to those of our stronger state institutions.

Private universities, much like our own, grew out of missionary schools. Few have retained denominational affiliation. The number of private universities exceeds the number of public universities in Japan, numbering more than 150. Entrance requirements run the gamut from rigorous to nominal and tuition is high although the institutions do receive governmental subsidies. It is in a few of the private institutions that one may almost literally "buy a degree."

Table 1 presents data gleaned from the AACRAO publication by Vroman.[1] While the data are out of date, they are sufficient to give a good idea about the relationships between the enrollment, the rigor of entrance requirements, and the relative numbers of the four types of institutions.

TABLE 1

NUMBER OF UNIVERSITIES AND TOTAL UNDERGRADUATE ENROLLMENT BY RIGOR OF ENTRANCE REQUIREMENTS AND TYPE OF INSTITUTION

Type of Institution	Rigor of Entrance Requirements							
	Severe		Moderate		Nominal		Total	
	# of U's	# of S's	# of U's	# of S's	# of U's	# of S's	# of U's	# of S's
National	42	128,000	30	53,000	—	——	74	181,000
Prefectual	14	10,500	9	5,000	—	——	23	15,500
Municipal	2	6,500	8	7,500	—	——	10	14,000
Private	11	28,000	88	358,000	48	44,500	147	430,500
Total	69	173,000	135	423,500	48	44,500	252	641,000

Translated into terms we can understand, then, the Japanese university system can be described as follows:

National universities – selective American private institutions with limited enrollment and high entrance criteria.

Prefectual universities – highly selective state universities, e.g., Michigan and Berkeley, with stringent enrollment controls.

Municipal universities – entrance criteria similar in rigor to the state college system in Calfornia, but with stringent enrollment ceilings.

Private universities – similar to most American state colleges and universities.

As one Japanese administrator put it, "Our public universities are similar to your Ivy League and technical schools like MIT and Caltech. Our private universities are more similar to your public universities. We are again backwards in your eyes."

Entry into most institutions is determined by institutional entrance examinations. There is no recognized national exam such as the CEEB. Results are publicly posted. Furthermore, most exams are given on the same day, effectively preventing multiple applications. Finally, students apply for admission into specific disciplines, each of which has a definite quota.

The foregoing, then, was a thumbnail sketch of Japanese universities. Stresses within this system have led to numerous violent confrontations between students and the university and students and the government. While there are some ingredients in Japanese student unrest which differ from those found here, there are numerous similarities.

This paper will selectively discuss both the similarities and the dissimilarities between the university systems of Japan and the U. S. The paper results from a digestion of more than 50 interviews with administrators, faculty, and dissenting and non-dissenting students at six Japanese universities in October, 1969.

Beginning in Summer, 1968 at Tokyo University, the anti-examination movement began. In 1968 alone, 120 of Japan's 369 universities were torn by student demonstrations. Students demanded a halt to the public posting of examination results. They also agitated for a national examination which would allow multiple applications. These issues have not yet been resolved but the faculty are moving with "all deliberate speed" towards an equitable solution.

Parenthetically, it might be noted that some students are so determined to attend a given university that they remain near the institution to study for the next examination. Such students are called "nnin" – named after the masterless samuraii of a bygone era. Every year a few students commit suicide but this action is becoming increasingly rare. Many students move on to a second-choice institution and wait to take the next examination there. Those who come from well to do families often enroll in a private school where the demands are not as stringent. Finally, many students just give up and drift towards industrial positions.

The radical student groups in Japan, having gotten some student support in the anti-examination movement, escalated to making demands upon the universities to remove specific departmental quotas, to allow students greater freedom in intra- and inter-institutional transferring, and to revamp the entire university system.

The second wave of demands were aimed at the heart of the feudalistic Japanese academic system. Professorial chairs some of which had been handed down within the family were threatened. The quota system was threatened. Students actually asked for a voice in departmental matters! Seniority, the time honored Japanese system, was threatened.

One instructor (equivalent to assistant professor) said, "The baron is worried. He'll have to give up some of his authority and stop being omnipotent. People like me will have a chance for promotion on merit, not on how long we've been here. We would have a better chance to move between institutions without the worry of loss of seniority. Research money will come to us and not to the baron. He gives us the money only if he feels like it."

A chair holder said, "It's all ridiculous. Students involved with decisions? It's only the freshmen who are demanding, not the others. What do they know? I worked hard for my position and it was good. You learn discipline, respect for rules, and so on, and any one who doesn't shouldn't be a professor. We may eventually have to make some concessions but I'll never do it. Why are they attacking me? Colleagues of mine have committed suicide over this. It's a shame, a waste."

A dissident student commented, "The system is not good. **You** have no set quotas on the number of undergraduates and their (American students') education doesn't seem to suffer. You have better teachers and better research because it's a plus if they (faculty) do it. We have only 20 percent of our youth in universities because there isn't any room. You have 50 percent. The public universities have the least room of all. We cannot improve teaching by sitting and bowing, we have to strike now."

There is a difference between the dissidents in Japan and the U. S. Here graduate students provide leadership. In Japan, the dissidents are almost all freshmen. Very few upper-classmen and almost no graduate students participate in university-related disturbances.

The university-related disturbances have familiar themes. Curricular relevance, emphasis on teaching, student voice in decision making, "weed out the dead wood," etc. But it is a strange commentary to note that freshmen in Japan carry the burden. On some campuses, yeaterday's freshmen are now upperclassmen and among those who were dissidents one now finds conformers. The revolutionary zeal is gone. They no longer fight the system but accept it as it is.

These disturbances have directly contributed to a half-dozen suicides by professors. Several thousand students have been arrested and more than a thousand injured. Freshmen have occupied university buildings and prevented instruction. Because all freshmen must complete general education courses in their first year, prevention of instruction has been an extremely effective disruptive technique. Universities studied the problem and decided that instruction could be disrupted for no more than six months. By teaching seven days a week, the six month loss could be recouped. This has led to a policy of non-intervention for six months followed by police enforced evacuation of buildings.

Needless to say, police have not been able to evacuate occupied buildings peacefully. Those who saw Reischauer's special on Japan witnessed the storming of "Yasuda Castle" at the University of Tokyo. Police battled with students who threw concrete blocks, Molotov cocktails, etc. Police retaliated with teargas, clubs, and water sprayed by helicopter.

Police tactics have not always proven successful. This year at the University of Tokyo, there will be no new freshmen class. The freshmen from last year will comprise this year's class. This means, of course, an absence of a sophomore class.

One alternative being tried at some universities is a sleep-in by the faculty. As a gesture, faculty members take turns sleeping at the entrances to buildings on the campuses. To date, buildings "protected" in this manner have not been occupied by dissidents.

There is no doubt among many that the system needs many changes. Curricula do need revision and more reflection of the real world. Students should have a voice in many of the decisions which are made. The chair system does stifle originality by not providing rewards for jobs well done. But the system is old and bound by tradition and sanctioned by those in power in academe.

The academic system in the U. S. is more amenable to change. Many institutions now have students with voting rights on departmental, faculty, and university committees. Curricular change is happening. But we are moving inexorably toward the quota system. Will our students who have a much better opportunity to get higher education be more willing to accept quotas as a necessity than were the Japanese?

The final stage has been student objection to Japanese foreign policy and the government; and anti-American feelings. This stage calls for social reform (equality of sexes, more equitable sharing of profits, etc.), political reforms (more concern for the worker and less for the businessman), anti-war movements (against American involvement in Southeast Asia), anti-militarism (opposed to strengthening of Japan's "Self-defense forces."), and nationalism (return of Japanese territory, e.g., Okinawa).

It is in this stage that students obtained their highest level of support. Rallying around their banners came men from the labor unions, ordinary citizens, etc. Students managed to attract a more broadly based following by focusing attention on issues of more general public concern. In fact, many faculty joined these demonstrations. Japanese students, just as their American counterparts, then, were able to present to the public massive rallies with thousands of participants. These demonstrations were ably abetted by the mass media which tended to present distorted pictures to the public. Radical student groups, e.g., Young Communists, whose activities were viewed with disgust by other students, drew support from the middle of the roaders on issues of national concern.

I talked with students who were passively watching as the police tried to clear some university buildings. These students viewed the radicals in the occupied buildings with disdain but a few days earlier the observers had been quite active in anti-war demonstrations. It is interesting to note that the buildings which were being contested were quite empty during the anti-war rally and the police could have occupied them quite easily with a dozen men.

Japanese radicals have found, in common with American radicals, that on some issues ideological differences which kept groups apart were no longer operative. One noted this phenomenon in the U. S. during the anti-war demonstrations following the Cambodian expedition. Students who were not concerned enough to actively oppose Viet Nam intervention became concerned enough to do so when the Viet Nam situation became an Indo China affair. Faculty members who opposed many of the university reform demands of radical student groups also have joined forces with students on this issue. Many members of the general public have also actively supported these new demonstrations.

This is a strange alliance of bedfellows. The issue of Indo China is the salient feature and undoubtedly the radical element will gain some support from this issue which can be carried over into the next confrontation.

One of the major differences in the methods used to contain the demonstrations is that in Japan one gets an eerie feeling that he is watching a gigantic cinerama extravagaza. The props are real and potentially fatal. There are many injuries but very, very few fatalities. The Molotov cocktails don't burn humans and furled missiles don't strike human flesh. Each side seems to surge backwards and forwards as if on cue. As mentioned before, there even seems to be some tacit agreement between the police and students that buildings left unoccupied because of more important issues will not be taken over in the absence of the occupiers. Virtually everyone keeps his cool in these demonstrations. However, the injuries result from confrontations between police and students during demonstrations off campus. These demonstrations involve such issues as social welfare reform and militarism. They do not involve matters of more intrinsic academic concern.

In the states, one sees something different. It seems inevitable that in a massive campus protest someone loses his cool and out comes tear gas, night stick, mace, and lead. There is no feeling of being in the middle of a scene from some spectacular. Rather, one gets a feeling of dread and foreboding.

There are then, similarities in issues and personalities between Japanese and American student unrest. There are also differences. The issues are largely the same in a global sense but they differ in details. Both nations' students call for educational reform but while the far eastern students call for what is in essence a more American system, our students call for major changes within the social institution called the university which go beyond the Japanese demands. This phenomenon is, perhaps, inevitable since we are at the point that the Japanese are trying to reach. Our students must contend with the status quo on different specifics if they are to be anti-establishment at all.

So far the American convolutions have not reached the stage of deep animosity between faculty and students. It is, perhaps, due partly to our more informal social system. The roles we play are much more flexible and we are much more able to differentiate between our roles than are the Japanese. We can view an attack on the university system as just that. The Japanese, on the other hand, view such attacks as also being an attack on the individuals involved.

Finally, the means of control are different. In Japan, the situation is by and large one of controlled violence which goes almost as if set down in some script. We, on the other hand, are much more likely to improvise on the script.

Perhaps the Japanese have learned that departure from the script is fatal and, if so, there may be hope for us in America. Since the confrontations are not likely to stop in the near future, we can only hope that we'll come up with a good play which satisfies us but isn't fatal. On the other hand, maybe we are ahead of the Japanese and they, too, may look forward to seeing real blood shed on their campuses.

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[1] Vroman, Clyde. JAPAN: A STUDY OF THE EDUCATIONAL SYSTEM OF JAPAN AND GUIDE TO THE ACADEMIC PLACEMENT OF STUDENTS FROM JAPAN IN UNITED STATES EDUCATIONAL INSTITUTIONS. American Association of Collegiate Registrars and Admissions Officers, 1966.

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SOURCES OF STUDENT SATISFACTION IN THE COLLEGE EXPERIENCE

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American College Testing Program

This paper presents the findings of a study on sources of student satisfaction with their college experiences which was undertaken as part of an extensive survey of the impact of college on students.

The sources of information about students for this study are the Student Profile Section (SPS) of the regular ACT Battery and a specially-designed questionnaire. The SPS was added to the ACT Battery in the fall of 1964 in accord with ACT's conviction that colleges should also be concerned with other characteristics of applicants than the typical measures of academic potential. The SPS is a short inventory which gives the high school student an opportunity to tell prospective colleges about his aspirations and goals, his expectations about his college experience, and his achievements outside the classroom in the areas of art, music, science, drama, writing, and leadership.

The graduating class of 1969 was, thus, the first group completing their college undergraduate experience for whom SPS data were available. A special questionnaire was developed including several items from the SPS plus a number of others pertaining to the students' evaluations of their college experience, post-graduate plans, sources and degree of satisfaction with their colleges' social, academic, and intellectual climate, and their estimates of development on various cognitive and noncognitive dimensions attributable to the college experience.[1]

Review of Literature

Despite the lack of generally accepted theoretical framework and analytic methods, there has been no lack of research on the impact of college on students. Comprehensive reviews of such studies were published as long ago as 1937 (Strang),[2] later by Bloom and Webster (1960),[3] Freedman (1960),[4] Jacob (1957),[5] and Sanford (1962),[6] and more recently by Chickering (1969),[7] and Feldman and Newcomb (1969).[8] In addition to these works which generally summarized research findings, Feldman (1970) reviewed and evaluated the research strategies in studying college impact.[9]

Even in aggregate, empirical research which directly compared college experiences as sources of student satisfaction has not been definitive. Much of the work on this topic has been of an anecdotal or case-study approach (see Sanford, 1962; and Freedman, 1967).[10] Of the empirical studies which have been conducted, very few have involved large numbers of students or inter-institutional comparisons.

Trent and Medsker (1968) found that approximately 90 percent of those students who completed college and 70 percent of those who did not complete felt satisfied with intellectual growth as a result of college.[11] Henderson and Northrup (1964) sampled students at Pennsylvania State University and found that a majority (61 percent) "agreed" that Pennsylvania State is doing a very good job in fulfilling "the educational goals I consider important," and that 27 percent disagreed with the statement.[12]

Panos and Astin (1968) asked seniors in a large number of institutions to rate their overall satisfaction with their college.[13] About 83.1 percent of the students were either "satisfied" or "very satisfied"; about 10 percent were "on the fence."

In their study of selected college campuses in the United States Goldsen, et al. (1960) stated: "College students feel that college education is important, useful, and of good caliber.[14] Their morale is high. They **like** going to college. They say their colleges and universities are **doing a good job.**"[15] More recent studies have found less satisfaction among students.

Davis (1963) found that: "In terms of individual characteristics, students' perceptions of value climates are distorted toward their own value positions, and students with high grades tend to give lower estimates of the intellectuality of their campuses than students with poorer grades."[16] Berdie (1968) studied changes in perception of the college environment during the first two years, using the College and University Environment Scale.[17] He found that students had "tempered" their "enthusiasm about the university during the first two years in attendance, but, nevertheless, their attitudes and reported perceptions paint a favorable picture of the institution."

Baird, Richards, and Shevel (1969) studied a large sample of two-year college graduates and found that "graduates were generally satisfied with their two-year college."[18] In particular, they were satisfied with "most aspects of their instructors' performance . . . ."

Satisfaction with the collegiate experience may be regarded as analogous to vocational satisfaction. In summarizing "the voluminous literature on satisfaction, which is the largest on any topic in vocational psychology . . ." Crites (1969) found that a) vocational satisfaction is not a clearly refined and well-understood concept, b) there is no consensus about how many dimensions of vocational satisfaction there are, and c) research findings have been inconsistent and even contradictory.[19]

Betz, Klingensmith, and Menne (forthcoming) however, have developed a standardized College Student Satisfaction Questionnaire (CSSQ) drawing "upon principles and methods which have resulted from years of research on the satisfaction of employees in business and industry."[20] Factor analytic studies of their preliminary use of the CSSQ indicated "that it is an internally consistent measure of several dimensions of college student satisfaction." Their preliminary use of the CSSQ has yet to "clearly indicate the direction or pattern of satisfaction changes over the college years; this is a question which can be clarified only with further study."

Objectives

The purpose of the present study is to determine the relationship between certain social, economic, and academic background variables and the extent to which four groups of items listing collegiate experiences have been a source of satisfaction to sampled students. Prior to analysis, the fifteen items had been grouped into academic, social, extra-curricular (special interest), and extra-curricular (recreational) dimensions. The direction of some of the relationships could be anticipated logically on an a priori basis, for example college grade point average and satisfaction with academic experiences (positive) and distance of residence from campus and satisfaction with social experiences (negative). However, the relationships were all conservatively subjected to two-tailed tests of statistical significance.

In the absence of a definitive and generally acceptable theoretical framework of college impact, the objectives of the study are largely exploratory. The exploratory nature of the study is viewed in two distinct dimensions: a) By ranging over a wide variety of topics through analysis of data obtained from a large and diverse sample, it is anticipated that the study will generate a number of specific hypotheses to be tested through subsequent definitive research. b) In view of the extreme and persistent difficulty in measuring cognitive and noncognitive change in students over a long period of time, it is also anticipated that the data will lend themselves to exploration of a number of promising research methodologies.

The present study shares in the general limitations of studies which use data consisting of expressed opinions or self-evaluations. Thus, we are asking for students' evaluations with no direct checks on how objectively accurate these evaluations might be. We justify this procedure on the basis that this perception, however accurate or inaccurate, is in itself a social fact, and it is the social fact that we are interested in measuring. Furthermore, some students may see response to the instrument as an opportunity to either enhance or degrade the image of their college, depending on their feeling toward the institution at the time they responded to the questions. Clearly, this implies that the same instrument administered at a different point in time may elicit from the student a quite different response. Also, please note that we are aggregating individuals' perceptions of their own experience. This is directly opposite from asking for students' perceptions of aggregate characteristics of college experience, as when students are asked to evaluate how they thought their class or any particular group of students felt about the various sources of satisfaction.

The Sample

In the first two stages of the sampling process, a random sample totaling 108,203 was drawn from the ACT Class Profile and Plan A history tapes containing data from 113 colleges for those who took the ACT Battery from October 1, 1964, through August 31, 1965, and enrolled in September, 1965. From this group, student records were selected for seniors at 64 four-year colleges and universities. Of these institutions, 47 were publicly-supported and 17 were private. Of the latter, all but one were nondenominational. The institutions are located primarily in the midwest, southern and southwestern portions of the country. Due to a number of administrative problems, the questionnaires were administered in May and June, 1969, in a wide variety of ways among the various colleges; some colleges conducted one or more follow-ups, some had no follow-ups; some mailed the questionnaires to graduating seniors, others administered the questionnaires in group settings on campus. Thus, it was not possible to determine the exact overall number of students in the sample to whom questionnaires were actually administered, and, consequently, the exact response rate for the aggregate sample. A total of 8,983 usable questionnaires were received and processed. Data in this report are presented both for this total group of respondents and for the subgroup of 5,623 students for whom it was possible to merge their questionnaire responses with the 1964-65 ACT Test Battery and Student Profile Section data records.

To determine possible biases in the data for the respondents compared with the population of those who took the ACT Battery as prospective freshmen the frequency and percentage distributions on the key background variables for the larger group of randomly drawn records of 108,203 students were compared with those of the 5,623 students whose records were merged back to the information they had given four years earlier.[21] The distributions correspond quite closely between the two groups for sex, level of education to which the students aspire, family income, college goals, age, and marital status. There are, however, two variables on which the distributions differ: The respondents have somewhat higher ACT Composite Scores; and the respondents are over-represented in the major and vocational fields which are grouped as "social, religious, and educational." Thus, to the extent that students with somewhat higher academic aptitude and academic and vocational goals of this type may differ in their responses to a question about their satisfaction with various college experiences, these data are probably biased to the extent that such students are over-represented in the group of respondents. These differences were not deemed severe enough to warrant complicated weighing procedures or discarding data from the small groups of students which was over-represented.

As a further delineation of the findings in this report, the following description or "profile" is offered of the respondents: Of the 8,983 respondents, about 60 percent were male, 40 percent were female; slightly over 45 percent were from universities and colleges with over 10,000 enrollment, 30 percent were from colleges and universities between 3,000 and 10,000 enrollments, and the remainder were from colleges smaller than 3,000 enrollment; 78 percent were enrolled in public colleges and universities and 22 percent were enrolled in private institutions; slightly over one-half listed social science, religious or education fields as their major and/or vocational field; slightly over half had never changed their major, slightly over one-third had changed it but once; 10 percent of the seniors thought that their college was only fair, 52 percent thought that theirs was a good college, and 37 percent felt that this was the best possible college for them; all but a very small percentage of the seniors were single. Their overall college grade point averages were as follows: 4 percent had A, 13 percent had B+, 24 percent had B, 37 percent had C+, 21 percent had C, and 1 percent had D+. The grade distributions were somewhat higher for courses in their major field. The overwhelming majority indicated that their most important college goal was either to secure vocational or professional training (54.8 percent) or to develop their mind and intellectual abilities (34.3 percent). The respondents include only those graduating seniors (83.1 percent) or other upperclassmen who enrolled as entering freshmen in the same institution nearly four years earlier. Information was also available on a number of other factors, most of which will be described later in relation to responses on sources of satisfaction with the college experience.

Method

The usable ten-page questionnaires were edited and machine scored using mark-sense equipment. The 8,983 student records were placed on magnetic tape, and, of these, 5,623 of the seniors' responses were also merged back to the record of the data they had provided four years earlier. Each of the 64 participating colleges received a report showing the frequency and percentage distributions of the responses for their seniors as compared with the responses of all 8,983 seniors.

In this study, the students' responses to the following statements are regarded as the dependent variable: "Please indicate the extent to which each of the following has been a source of satisfaction to you during your college years." To each of 15 items, the student responded by indicating one of the following responses: "Not a source of satisfaction," "A minor source of satisfaction," or "A major source of satisfaction." For the purposes of this study, these responses were regarded as ordinal thus affording the use of a measure of ordinal association where this variable was related to a background variable with an ordinal or interval level of measurement. The measure selected was gamma since it is among the best-known and most frequently used of such measures, and has an intuitively appealing interpretation based on conditional probablility that can be directly applied to the set of data on which it is computed. Tests of significance were applied by computing the standard score of S (the numerator of gamma) the sampling distribution of which is normally distributed.[22]

Results

Over four-fifths of the total pool of responses to items listing college experiences were indicated as either a minor or major source of satisfaction. The total number of responses over all items was 129,020. Of these, 24,944 (19.3 percent) were for the first alternative ("Not a source of satisfaction"); 47,157 (36.6 percent) were for the second ("A minor source of satisfaction"); and 56,919 (44.1 percent) were for the last alternative ("A major source of satisfaction"). Table 1 shows the responses for each item.

TABLE I

Student Responses (N=8,983) to the Question: Please indicate the extent to which each of the following has been a source of satisfaction to you during your college years. (Note: The totals for each item vary slightly due to missing data. Percentage of cases of missing data never exceeded 3.8 per cent.)

	Item	Not a Source of Satisfaction		A Minor Source of Satisfaction		A Major Source of Satisfaction	
		N	%	N	%	N	%
1.	Taking courses in your major field	255	2.8	2,013	22.4	6,535	72.7
2.	Taking courses outside your major field	780	8.7	4,830	53.8	3,185	35.5
3.	Participating in activities outside the classroom in a field of special interest to you (Art, Music, Science, Writing, Drama, etc.)	3,479	38.7	2,634	29.3	2,631	29.3
4.	Participating in organized extra-curricular activities	3,117	34.7	3,015	33.6	2,587	28.8
5.	Participating in activities related to social problems that concern you	4,720	52.5	2,783	31.0	1,163	12.9
6.	Associating with faculty members	2,427	27.0	4,408	49.1	1,895	21.1
7.	Increasing your skills in a field of special interest to you (Art, Music, Science, etc.)	2,484	27.7	2,656	29.6	3,575	39.8
8.	Attending college athletic events	2,169	24.1	3,688	41.1	2,874	32.0
9.	Attending college-sponsored cultural events (lectures, concerts, art exhibits, etc.)	2,207	24.6	4,616	51.4	1,931	21.5
10.	Associating with students in general	254	2.8	2,440	27.2	6.054	67.4
11.	Associating with students sharing a special interest with you (Art, Music, Science, etc.)	885	9.9	3,103	34.5	4,769	53.1
12.	Having a close friendship with an individual student of your own sex	600	6.7	2,900	32.3	5,280	58.8
13.	Having a close relationship with an individual of the opposite sex	960	10.7	2,015	22.4	5,772	64.3
14.	Mastering an intellectual discipline (your major field	480	5.3	2,615	29.1	5,664	63.1
15.	Mastering major challenges outside the classroom in a field of special interest to you (Art, Music, Science,etc.)	2,296	25.6	3,441	38.3	3,004	33.4

The proportion of responses for each alternative varies widely among items. Over half (52.5 percent) of the respondents found the fifth item, "participating in activites related to social problems that concern you," not a source of satisfaction compared with only 2.8 percent of the responses to the first item, "taking courses in your major field," and the tenth item, "associating with students in general." The variance was even greater among items for percentage of responses to the third alternative, ranging from 72.7 percent for the first item down to 12.9 percent for the fifth item. "Participating in activities related to social problems that concern you" seems to be the least satisfactory experience as indicated by these respondents. In interpreting this finding, it should be emphasized that the responses do not indicate frequency of participation but the relative satisfaction reported with the experience. In these terms, it may well be that of all experiences listed "participating in activities related to social problems" may have resulted in the least evidence of progress or impact. That is, poverty, race relations, or other social problems may not have improved perceptively despite the student's efforts.

Prior to editing and scoring of the questionnaires, the items were grouped into four dimensions of college experiences as shown in Table 2.

TABLE 2

Dimensions of College Experiences as Sources of Satisfaction

Dimensions	Not a Source		Minor Source		Major Source		Total	
	Responses	%	Responses	%	Responses	%	Responses	%
Academic (Items 1, 2, & 14)	1,515	5.7	9,458	35.9	15,384	58.4	26,357	100.0
Social-Interpersonal (Items 6, 10, 11, 12 & 13)	5,126	11.7	14,866	34.0	23,770	54.3	43,762	100.0
Extra-Curricular – Special Interest (Items 3, 7, 9, & 15)	10,466	29.9	13,347	38.2	11,141	31.9	34,954	100.0
Extra-Curricular – Recreational (Items 4, 5, & 8)	7,837	32.7	9,486	39.6	6,624	27.7	23,947	100.0

The academic and social-interpersonal dimensions were clearly a more satisfying source of collegiate experiences than either of the extra-curricular dimensions. While the social-interpersonal experiences involving relationships with other students were a major source of satisfaction for nearly two-thirds of the respondents, association with faculty members (item six) was a major source of satisfaction for only about one-fifth of the respondents. Referring back to Table 1, it can be seen that the sixth item was a markedly less satisfactory experience than any of the other items in the social-interpersonal grouping; removing item six from this dimension yields a distribution of 2,699 (9.3 percent), 10,458 (36.1 percent), and 15,821 (54.6 percent), respectively.

These groupings suggest the possibility of identifying discrete factors of satisfaction with collegiate experiences through determination of their interrelationships. Accordingly, further plans for analysis of these data include item intercorrelations and factor analysis. The results, if appropriate, will be published in a forthcoming ACT Research Report.

Final results included in the present paper pertain to the association between the dimensions of college experiences as sources of satisfaction and selected background variables. The association was measured between responses for each alternative and 12 background variables. For the sake of brevity, Table 3 shows only the statistically significant results of these analyses.

Of the 12 variables, only five were associated significantly with one or more of the dimensions. Residence of the student was significantly associated with the social-interpersonal and both of the extra-curricular dimensions, with particular strength of association with recreational types of experiences. For these dimensions frequency of responses for "No source of satisfaction" increases with social distance from campus as determined by residence (on campus, off campus, and home). The converse is true for "Major source of satisfaction."

Following is a description of the background variables shown in Table 3: "College grade point average" is a forced-choice grade average for all courses (ranging from "D or lower" to "A or A+") as self-reported by the respondent; "High school achievement score" is a total of the positive respones to three different achievements; "Distance of residence from campus" is a forced-choice measure of commuting time ranging from zero for those who live on campus to more than two hours both ways; "High school leadership score" is the total of positive responses to eight leadership achievements.

Background variables which were not found to be significantly associated with these dimensions of satisfaction were: Number of times the respondent changed major, amount of part-time work, whether or not the respondent indicated "intellectual or professional" as his goal in college, marital status, type of college, size of college, and sex.

TABLE 3

Values of Gamma and Standard Scores for Dimensions of College Experiences as Sources of Satisfaction by Background Variables (Note: All standard scores shown are significant at the .01 level)

Dimensions	No Source		Minor Source		Major Source	
	y	z	y	z	y	z
Academic						
By college grade point average	-.323	-11.38	-.196	-12.34	.271	17.56
By high school academic achievement score	-.270	- 8.71	-.165	- 9.94	.244	15.14
Social						
By residence (on campus, off campus, or home)	.125	6.73	.101	6.85	-.151	-10.63
By distance of residence from campus	.084	5.20	.096	7.47	-.125	-10.08
By high school leadership score	-.298	-19.70	-.118	-10.03	.254	22.34
Extra-curricular – Special Interest						
By college grade point average	-.158	-10.41	.057	3.92	.110	7.45
By residence (on campus, off campus, or home)	.111	7.20	-.058	- 3.90	-.058	- 3.83
By high school leadership score	-.278	-22.35	.070	5.90	.220	18.50
Extra-curricular – Recreational						
By residence (on campus, off campus, or home)	.284	20.66	-.107	7.49	-269	-18.02
By distance of residence from campus	.214	18.21	-.071	5.87	-.218	-16.97

Discussion

The finding of this study are consistent with those of other studies in that the respondents were generally satisfied with their college experiences. The satisfaction is, however, far from uniform, e.g., less than half of the respondents found satisfaction in participating in activities related to social problems while 97 percent found either major or minor satisfaction in taking courses in their major field and associating with students in general.

This study succeeded in tentatively identifying "dimensions" of satisfaction in the college experience. The variance within the groups of items representing dimensions was much less than the overall variance. A notable exception in the social-interpersonal dimensions was the experience of associating with faculty members, cited as much less satisfactory than four other items pertaining to social relationships with students. In general, the four dimensions were dichotomized between a) the academic and social-interpersonal dimensions which were a major source of satisfaction for over 55 percent of the respondents and b) the extra-curricular dimensions which were a major source of satisfaction for less than 30 percent of the respondents.

The search for relationships identified five background variables significantly related to these dimensions of satisfaction. The academic dimension was, as might be expected, strongly associated with college grade point average and academic achievements in high school. All other dimensions were strongly related to only two variables signifying social distance and by high school leadership achievements. The principal value of these analyses are to further specify and describe relationships which are consistent with logic and prior research.

Implications for university policies follow directly from these findings. There is much to be done to increase student satisfaction with many areas of extra-curricular activities and experiences. These findings also point to the existence of a "generation gap" between students and faculty and the subsequent opportunity to reduce it. Another general interpretation is that these students may be telling us that colleges do rather well in their academic program efforts, particularly in courses in their major field, but fall far short in other areas. Further research might try to delineate the difference in acceptability by students between college-sponsored extra-curricular activities and those which are generated by and among the students themselves.

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INTERACTION MODELS FOR STUDIES OF COLLEGE DROPOUTS

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While the issue of college attrition has been extensively studied, these studies have been too desparate and narrowly empirical to permit a meaningful general integration of our knowledge. The conferences and reviews devoted to this issue (e.g., Summerskill, 1962;[1] Waller, 1964;[2] Knoell, 1966;[3] Cope, 1968[4]) have been mainly expressions of dissatisfaction with what has been done in this area.

This does not imply that the data that have emerged from this research are lacking in significance or value. For example, a number of studies have provided significant data by helping delineate the nature and scope of the dropout problem. They have provided important information on the rate of dropout (Iffert, 1958;[5] Summerskill, 1962[1]) and the historical trends in these rates (Summerskill, 1962;[1] Pervin, 1965[6]).

The studies on the factors related to dropout have also provided useful data, although somewhat limited by the fact that they have tended to view these factors in isolation. They have rarely attempted to analyze complex or even simple interactions of factors. The studies have been particularly useful in pointing to generalized predispositions to dropout, i.e., those individual factors which seem to show a fairly consistent and constant relationship with dropout across institutional settings. **Academic readiness** is one such obvious characteristic. National studies have shown, as expected, that the average score on aptitude tests is significantly lower for dropouts than for graduating students (Iffert, 1958;[5] Knoell, 1960;[7] Trent and Medsker, 1967[8]). Studies at specific institutions generally support this finding as well; however, a few investigations have indicated little or no difference between dropouts and persisters on tests of academic aptitude (Pervin, 1966;[9] Cope, 1968[10]).

Socioeconomic factors have also been found to be related to attrition in a fairly consistent way. For example, Eckland (1964)[11] found that several indices of social class–father's occupation, parents' education–are directly related to final graduation (within ten years after entrance). Other recent reports support his findings (e.g., Astin, 1964;[12] Trent and Medsker, 1967;[8] Panos and Astin, 1968[13]).

It might be noted that even in instances where fairly generalizable findings have been obtained, the meaning of the relationships are by no means always obvious or clear. With respect to academic readiness, for example, a number of researchers (e.g., Iffert, 1958[5]) conclude on the basis of their results that rank in high school graduating class is a better predictor of the probability of not dropping out of college than is one's standing on college placement or scholastic aptitude tests. This suggests that the relationships between dropout and measures of academic readiness are a function of psychological and motivational factors as well as "aptitude" or "ability."

The relationships with socio-economic background, when they occur, are also somewhat ambiguous as to meaning. Part of the relationship is probably due to the fact that a student needs money to pay his fees and remain in the institution. Financial difficulties are quite frequently mentioned by both sexes as a reason for withdrawal (Astin, 1964;[12] Iffert, 1958[5]). However, a number of researchers hold the view that socio-economic status may be a more important factor in attrition than economic ones and it is the parents' encouragement of the pursuit of intellectual and educational values that is the crucial issue (Slocum, 1956;[14] Trent and Ruyle, 1965[15]).

On some **demographic characteristics** there have been no consistent relationships with attrition across studies. With respect to sex, for example, findings have consistently supported the fact that males and females have different reasons for withdrawal–men tending to cite internal and academic reasons while women more frequently mention external and non-academic ones (Astin, 1964;[12] Iffert, 1958;[5] Suczek and Alfert, 1966;[16] Lins and Abell, 1966;[17] Cope, 1970[18]).

This would suggest that in order to understand the reasons for attrition among men and women, it would be critical to view attrition in a way that takes account of the differences in the needs and values of men and women in our society and how these are differentially gratified in different types of institutional settings. It is striking to note, in this connection, not only that such interactive approaches have been rare, but that a great many studies of attrition do not even present the basic data separately for male and female students.

When we leave the domain of demographic characteristics and look at the studies that have related attrition to **motivational-personality** dimensions the findings are not usually comparable because each investigator has approached the problem from a particular theoretical orientation and utilized personality measures derived within that orientation. Thus, Trent and Ruyle (1965),[15] following the orientation of the Berkeley Center for the Study of Higher Education and the Omibus Personality Inventory (OPI) that reflects that orientation, found that autonomy was the trait that most clearly distinguished college dropouts and graduates. They reported that graduates were more independent in their thinking, resorted less to stereotyping and dependence upon authority, were more open and tolerant of other people and ideas. Astin (1964)[12] compared dropouts and non-dropouts on the California Psychological Inventory (CPI) and found that the former tend to over-emphasize personal pleasure and to be aloof, self-centered and assertive. Keniston and Helmreich (1965),[19] who approached the issue from an identity framework, describe the person who is considering the possibility of dropping out as much less self-confident, less clear about his philosophy of life, and less sure of his capacity to cope than is the student who does not consider the possibility of dropping out.

A point to be noted with respect to the studies that have attempted to relate attrition to individual characteristics when the concern has been with personality rather than demographic characteristics is that they arrive at a generalized concept of the "drop-out personality" without considering the characteristics of the institution they are leaving. This approach seems to be inadequate. Dropping out is a transaction between an individual and an institution. Thus the student likely to drop out of an unstructured and progressive liberal arts college may be very different from the dropout from a traditionalistic religious college. Studies which ignore the institutional context will rarely generalize from insitution to institution.

While most of the studies on factors related to attrition have focused on individual rather than institutional characteristics, the latter have not been completely neglected in research. The most systematic has been the work of Astin who has approached the issue of dropout with the model that he has utilized in his study of other college impacts, that is, a model which indicates that institutional characteristics add to the variance once the individual input variables have been systematically considered (Astin, 1964;[12] Panos and Astin, 1968[13]). It might be noted, incidentally, that one of Astin's studies did indicate that at least with respect to an individual characteristic–the sex of the student–dropout was a function of the interaction of institutional and individual characteristics; he demonstrated that certain institutional characteristics were related to dropout for women students but not for men (Astin, 1964[12]).

Stern has also been identified with such a model, beginning with his studies with Stein and Bloom and their description of the fate of authoritarian students ("stereopaths") at the University of Chicago in the early 1950's (Stern, Stein and Bloom, 1956[20]). Stern's application, with Pace, of the Murry Need-Press model to the college situation in their work over the past decade with the AI (Activities Index) and CCI (College Characteristics Index) represents the most comprehensive attempt yet undertaken to translate a congruence model into a program of research on the impact of college on students.

In addition to the work of Stern, a number of other programs of research now under way have adopted a congruence model. Two examples of such research, which vary greatly in their orientations and the dimensions they study, are the works of Pervin and Rubin (1967),[21] and Keniston and Helmreich (1965).[19] Pervin and Rubin have been mainly concerned with **perceptual** congruence, relating probable drop out for non-academic reasons to the discrepancies between a student's perception of his self and his college, his self and other students, his college and the ideal college. Keniston and Helmreich, on the other hand, structure the problem around the identity issues that have been Keniston's concern in much of his research and writings. They view the congruence or lack of congruence of a college environment with a student in terms of the promotion or thwarting of the student's identity development. Keniston and Helmreich are also interested in the personality traits that are related to a student's remaining in college even under a high degree of discordance, traits such as the tolerance of frustration, the "Protestant Ethic," alienation and rebellion against parents.

The congruence model has also occasionally been applied in relating attrition to different sub-environments within a given institution. The study by Nasatir (1963)[22] represents one of the few systematic, quantitative applications of this model to a study of attrition. Nasatir characterized individuals and their dormitories according to their "academic" or "non-academic" orientation and indicated that academic failure was greatest where there was a discongruence between the dominant orientation of the individual and that of his dormitory.

The influence of studies designed around an interaction model can be seen increasingly in the interpretation given to results in studies of dropout even when the research was not specifically designed around such a model. Thus, Suczek and Alfert (1966)[16] in interpreting the unexpected finding that dropouts (that is, dropouts "in good standing") were more mature, sophisticated and less narrowly conventional than the non-dropouts, suggested that these dropouts' maturity may have made them dissatisfied and uncomfortable with the petty and restrictive demands of their environment at Berkeley.

Conclusion

Although critics (Knoell, 1960;[7] Summerskill, 1962;[1] Lavon, 1965;[23] Knoell, 1966;[3] Williams, 1967[24]) have suggested the need for it and studies are attempting it, it should be noted that a congruence model presents serious problems for research.

Although the basic idea of the model is simple and self-evident, serious difficulties are presented when one attempts to conceptualize and operationalize dimensions that are parallel and significant at both the individual and institutional level. The difficulties and frustrations experienced by Stern and Pace in their work with the AI and CCI attest to the difficulty of the problem with which they have grappled. For example, factor analyses of the two measures gave different factor structures at the individual (AI) and institutional (CCI) levels. Pace has essentially abandoned the attempt to integrate the individual and institutional levels and has turned to an institutional focus and the development of an instrument (CUES), to measure contrasting institutional environments. Stern, in summary of his work, has noted how difficult it is to capture in any large-scale quantitative analysis the effects of discongruence between student and environment.

> As had already been seen in an analysis of the matrix of AI X CCI correlations across school means, AI scales interpreted against CCI scores have press conditions to which specific needs were relevant and CCI scales interpreted against the AI as background indicated student characteristics associated with specific press conditions, but in neither case did the relationships involve simple scale-for-scale correspondence of variables of the same name on both instruments. The original problem of dimensional congruence still remained unsolved.[20]

The orientation of what is being suggested, then falls within a tradition that is recognized as important, but where most of the systematic work is still to be done. An interaction model (person-environment fit) can serve as an underlying orientation for the formulation of hypotheses and interpretations of results relating individual characteristics to attrition, given assumptions about the congruence or disordance of these characteristics with certain characteristics of a particular institutional environment.

Given this model for the overall design of studies the data analysis should be taken through several levels of controls, to the point where the relationships between individual characteristics and attrition are examined for population sub-groups. This final suggestion is offered because studies of attrition have rarely instituted the obvious controls–e.g., an ability level and socio-economic status–in examining relationships with attrition, nor have they assumed that different types of discongruences and different implications will occur for different population sub-groups.

What seems to be needed, then, is attrition research that is related to the impact of the college and that is more sensitive to the complex interactions of predictive variables. The impact of an institution on its students is affected not only by student variation on a given characteristic, but by the differential meaning and relevance of that characteristic in different subgroups of the population.

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THE STUDENT INSTRUCTIONAL RATING SYSTEM

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I doubt that there is any aspect of communication in Higher Education that is more crucial to the success of our efforts than feedback from the student to the instructor. Many instructors have long been interested in the opinions of their students, having found this information useful in course planning. Many universities, including Michigan State, have long had some type of rating form which instructors have used to assess student opinion.

I'd like to describe the Student Instructional Rating System (SIRS). It is designed to allow instructors to determine what attitudes their students hold toward various aspects of instruction. SIRS provides a ready-made instrument coupled with a reporting procedure designed to provide maximum information with a minimum outlay of instructor and class time. The use of a standard SIRS FORM by many instructors also allows individual instructors to compare the ratings they receive with ratings received by other instructors in their course, department, and college.

Knowledge of responses to an instrument such as the SIRS FORM can be valuable to an instructor. First, it provides a systematic sampling of student opinion rather than the haphazard sampling that an instructor usually receives in talking to students informally. Second, it provides a set of items which have been agreed upon, by faculty and student groups, as representing significant aspects of the instructional process. Third, SIRS allows an instructor to compare student reactions to his teaching with student reactions toward the teaching of others in the same course, department, and college. Fourth, and most important of all, should an instructor wish to change his methods and materials of instruction, SIRS enables him to compare student reaction to different methods and materials.

SIRS is not simply a pencil-and-paper rating instrument, but a system for collecting, analyzing, displaying, and interpreting student reactions to classroom instruction and course content. The components of the system are the FORM, the REPORT, the MANUAL, and the TECHNICAL BULLETIN.

The SIRS FORM is an optically scanned sheet containing twenty-one statements about class instruction. Students indicate the degree to which they agree or disagree with each statement. The second section of the FORM contains four items relating to student background. The FORM's third section contains three statements concerning laboratory or recitation section instruction. Response positions are provided for optional items in each of the three areas. The back of the FORM may be used for written comments of either a general nature or directed toward specific topics.

The SIRS REPORT is a computer print-out which summarizes student responses to the FORM. The REPORT first indicates the responses to the items concerning laboratory or recitation sections. For courses with no laboratory or recitation sections, the students would omit these items and the REPORT would simply confirm the omission.

The second section of the SIRS REPORT indicates student responses to the twenty-one items pertaining to class instruction. In addition to the percentage of students selecting each response, the REPORT shows the mean and the standard deviation for each item. Low mean values indicate agreement with a statement and high mean values indicate disagreement. Low standard deviations indicate considerable unanamity of opinion. Larger standard deviations, approaching the maximum value of 2, indicate widely varying opinions on that item.

In addition to the above information on student responses, the SIRS REPORT indicates an instructor's percentile rank for each item with respect to other instructors in the same course, department, and college. A percentile rank of 75 percent may be interpreted to mean that 75 percent of the other instructors received less favorable mean ratings on that particular item. One must be careful to note the number of instructors who have used SIRS in a course, department, or college. The percentile ranks must be based on at least several instructors before they become meaningful. Percentile ranks will normally be based on all the responses for the previous year.

The next section of the SIRS REPORT gives an indication of the previous background of the students. Means, standard deviation, and percentile ranks are also given in this section.

The final section of the SIRS REPORT presents a composite profile. Means, standard deviations, and percentile ranks are given for five areas: instructor involvement (items 1-4), student interest (items 5-8), student-instructor interaction (items 9-12), course demands (items 13-16), and course organization (items 17-20). Smaller standard deviations in this section indicate the variability among item means rather than among student responses as in the previous sections.

I'd like to describe the development of the SIRS FORM in some detail. First, a large pool of experimental items was developed. A sample of 36 instructors and 36 students was selected to represent a wide range of courses which were offered during Summer Term, 1967. The students were selected so as to be typical of their class with respect to student level, major and sex. The subjects, instructors and students, were asked to compare and describe their best and worst student, and best and worst instructor, respectively. Responses were recorded on code sheets and the responses were content analyzed.

The content analysis resulted in approximately 1,300 phrases or sentences which were typed on cards. In addition, existing student instruction rating forms from many institutions were surveyed. These procedures resulted in 250 experimental items. The items were arranged into categories which were a priori estimates of the factors underlying student attitudes toward instruction. The categories represented instructor variables (delivery of material, organization and presentation of material, and preparation and competency), student variables (transfer of course material, interest, course-related behavior, student evaluation of his own behavior, and biographical information about students), instructor-student interaction (classroom questions, consultations), course variables (organization and objectives, grading and exams, non-exam evaluations, and visual aids), laboratory or recitation variables (instructor, student behavior, exams, and visual or teaching aids), and general student affect (course value, and instructor attractiveness).

The 250 experimental items were divided into six parallel forms, each containing items on each of the a priori dimensions. The six forms were presented with equal frequency to a sample of 556 faculty members and 1,286 students. The faculty were asked to evaluate each item on four questions: 1. Does this item present information which you could use for course improvement?, 2. If you were to construct a student course appraisal sheet, would you include this item?, 3. Would you need additional information to interpret the responses to this item?, and 4. Do you believe that students have enough information and/or are competent to accurately respond to this item? Students were asked to evaluate the items on similar questions: 1. Do you believe this item is relevant for appraising this course?, 2. If you were to construct a student course appraisal sheet, would you include this item?, 3. Would you want to qualify your response to this item?, and 4. Do you believe that you have enough information and/or are competent to evaluate those aspects of the course referred to by this item? Students were also asked to respond to the items with respect to the course from which they were drawn as subjects. Usable responses were received from 611 students (48 percent return) and 265 faculty members (45 percent return).

Each of the experimental items was subjected to two criteria. First, it was required that at least 70 percent of the students and 70 percent of the faculty indicate that item 1. could be used for course improvement, 2. should be included in an evaluation form, and 3. could be competently evaluated by students. Second, the pooled faculty and student response had to be higher than 80 percent on each of the above three variables. Application of these criteria resulted in the selection of 56 items. Eleven biographical items such as class level, age, sex, and so on, were also included in the preliminary set of items. The items were cast in a yes-no-don't know format and were presented to 2,841 students in three undergraduate courses (Mathematics 112, Natural Science 192, and Psychology 151 and 345). Four items received fifteen percent or more of their responses in the "don't know" category and were therefore discarded.

The intercorrelation matrix of the remaining items was subjected to a principle components analysis and Varimax rotation. Five rotated factors were selected, accounting for 34 percent of the variance. The factors were: 1. instructor involvement, 2. student interest and performance, 3. student-instructor interaction, 4. course demands, and 5. course organization.

Of the 52 items, 33 had at least 2/3s of their variance on the five factor solution accounted for by one of the five factors. Responses to the 33 items by Natural Science 192 students were subjected to an analysis of variance to see if each item discriminated among instructors. On the basis of this analysis, four items were selected for each of the five factors.

The twenty-item scale was administered and factor analyzed. It was found that a five-choice response format produced a cleaner factor pattern than did the three-choice response format. Two items failed to maintain high loadings on a single factor and were replaced. The twenty-first item "You generally enjoyed going to lecture" had high loadings on several factors and was retained as a general affect item. A replication based on the responses of 8,000 students has found the factor structure to be stable.

A similar procedure was carried out for laboratory and recitation items, resulting in the selection of three items for inclusion in the final form.

SIRS includes programs to produce REPORTS and also to update the norms. After the SIRS FORMs administered during a particular quarter have been processed, the punched cards are used to update the norm tape. Thus the percentile norms cited on an instructor's REPORT are based on responses through the previous quarter. While we are still in the process of building sizable norms, we will probably carry norms based on the two previous years.

The system I have described has resulted in the development of a rather general instrument. When items were rated by faculty and students from a wide range of courses, items relevant to specific features of courses were eliminated. The development of supplementary forms has been encouraged. A number of departments, especially those offering laboratory instruction, are now regularly using forms designed by their own faculty and students.

Use of a form for student rating of instruction has long been encouraged for all faculty, but required for first-year faculty and all teaching assistants. Late in the Fall Term, 1969, the MSU Academic Council, on recommendation of the Educational Policies Committee, passed the following resolution:

1. Use of the Student Instructional Rating Report

   The use of the Student Instructional Rating Report (SIRR) should be adopted with the full realization that it is but one parameter of instructional evaluation.

   A. The regulations for the use of Student Instructional Rating Reports in effect since January 20, 1949, will be declared void on adoption of the new policy.

   B. Each of the teaching faculty (including graduate assistants) at Michigan State University regardless of rank or tenure is required to use the Student Instructional Rating Report to evaluate (1) at least one course in every quarter in which he teaches and (2) every separate course he teaches at least once a year.

   C. The results generated by the Instruction Rating Report shall be evaluated at the departmental level in order to help determine individual effectiveness. Appropriate procedures for the execution of this evaluation shall be determined according to departmental or residential faculty prerogatives.

2. Annual Report of the Department Chairman

   A new section of the Annual Report will be explicitly devoted to describing the steps which have been taken by the department or residential college to improve instruction.

Note that the manner in which SIRS REPORTS are used is left to the discretion of individual departments; each department must determine its own criteria for teaching effectiveness. At present there is a great deal of variation in the degree to which departments emphasize the use of student attitude feedback.

Several studies are now under way to evaluate the SIRS. The responses of approximately 46,000 students from Winter Term 1970 will be analyzed. Regression analysis will be used to determine whether responses differ from level to level of the student background variables (grade point average, and so on). Winter Term data will also be analyzed to determine the stability of the factor structure. A study, now in the conceptual stage, is being planned to examine the correlation between a student's frame of reference toward various aspects of instruction and his responses to the SIRS FORM items.

Comments from student and faculty users of SIRS are being gathered and analyzed. Many of the negative comments concern the generality of the FORM and the lack of relevance of certain items to specific courses. Positive comments often concern the desirability of feedback from student to instructor.

At this stage in its development, it is difficult to predict what the shape of SIRS will be in years to come. In any case, an empirically developed FORM, coupled with an automated data feedback system, will be available to facilitate student-instructor communication.

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FRESHMEN COLLEGE SELECTION EVALUATION

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This is the second of a series of studies begun in the summer of 1968 on what factors influenced freshmen and their parents to choose Elizabethtown College for their college career.

The same questionnaire used in the 1968 study[1] was continued in the 1969 project with few alterations. The form consisted of a listing of numerous reasons why a student would select a particular college. Included were such responses as "proximity to my home, it is a liberal arts college, scholastic reputation of the College," etc. Nineteen specific reasons were developed with provision for an open-ended response labeled "other reasons."

Again, the survey was duplicated for both groups of respondents, students and parents. Each form was provided with its own instructions for completing. The responses were ordered on both sets of questionnaires in the same manner. They were not numbered nor alphabetized but placed on the sheet at random. On both the students' and parents' forms there was included a rationale for their participation in the survey.

The instructions for completing the questionnaire were identical. Each respondent was asked to indicate in the order of their importance his reasons 1, 2, and 3, for choosing or preferring Elizabethtown. Moreover, the students were asked to check the appropriate box indicating male or female, and similarly, parents were requested to mark the appropriate son or daughter square. This distinction was requested in order to establish a correlation factor by sex between parents and students.

In tabulating the results of the survey, the responses of 1, 2, and 3 were weighted 3, 2, and 1 respectively. Consequently, the totals of the weighted responses corresponded to the importance of a particular reason for choosing Elizabethtown College listed on the questionnaire. The higher the total the more important the reason for choosing Elizabethtown; the lower the total, the less important the reason for selecting Elizabethtown. The weighted totals for each of the 20 responses were then listed in descending order.

Tables 1 and 2 compare the rank order of reasons for preferring Elizabethtown College by the students, men and women, and by the parents of these men and women

TABLE 1

A COMPARISON OF REASONS (IN THE ORDER OF THEIR IMPORTANCE) FOR CHOOSING ELIZABETHTOWN COLLEGE AS INDICATED BY ENTERING FRESHMEN MEN AND WOMEN 1969

MEN		WOMEN	
Points	**Item**	**Points**	**Item**
169	It is a small college	186	It is a small college
107	Proximity to my home	103	Proximity to my home
97	Superiority of studies in my chosen field	91	Appearance of the campus
77	The scholastic reputation of the College	77	Quality of faculty and students impressed me
55	The College facilities appealed to me	70	Superiority of studies in my chosen field
54	It is a liberal arts college	69	Friendliness of admissions personnel
53	Appearance of the campus	64	The scholastic reputation of the College
50	Friendliness of admissions personnel	61	It is a liberal arts college
49	Friends of mine went to Elizabethtown College	49	It is a church-related college (not necessarily Brethren)
45	The athletic program appealed to me	46	I received financial assistance
36	I received financial assistance	35	It's a coeducational college
34	Quality of faculty and students impressed me	31	Cost of tuition, room and board
33	Some of my relatives attended Elizabethtown College	28	Other reasons
30	It's a coeducational college	27	Some of my relatives attended Elizabethtown College
27	Other reasons	22	The College facilities appealed to me
17	It is a church-related college (not necessarily Brethren)	19	Friends of mine went to Elizabethtown College
9	Cost of tuition, room and board	15	The athletic program appealed to me
7	It is a Church of the Brethren College	14	It is a Church of the Brethren College
5	The College regulations appealed to me	12	The College regulations appealed to me

respectively. In regard to Table 1 there is very little difference in the rank order except that women placed a little higher value upon the "appearance of the campus" than did the men while the reverse was true with the response "the athletic program appealed to me." Perhaps the most important difference between the two rankings worthy of note is the 9th place ranking "it is a church-related college (not necessarily Brethren)" by the women while men ranked it 17th. Of all the groups (Table 2) compared in the analysis, the parents of the men and women matriculating at Elizabethtown College were most similar in their reasons for preferring Elizabethtown College for their sons or daughters.

TABLE 2

A COMPARISON OF REASONS (IN THE ORDER OF THEIR IMPORTANCE) FOR PREFERRING ELIZABETHTOWN COLLEGE FOR THEIR SONS OR DAUGHTERS AS INDICATED BY PARENTS OF ENTERING FRESHMEN

1969

SONS		DAUGHTERS	
Points	Item	Points	Item
79	It is a small college	63	It is a small college
62	It is a church-related college (not necessarily Brethren)	51	It is a church-related college (not necessarily Brethren)
38	Quality of faculty and students impressed me	47	Quality of faculty and students impressed me
31	Proximity to our home	36	The scholastic reputation of the College
29	Superiority of studies in his/her chosen field	22	Superiority of studies in his/her chosen field
26	The scholastic reputation of the College	18	It is a liberal arts college
20	Friendliness of College personnel	18	The College regulations appealed to me
19	The College facilities appealed to me	16	It is a Church of the Brethren College
18	It is a liberal arts college	14	Proximity to our home
13	The College regulations appealed to me	11	Friendliness of College personnel
9	A relative attended Elizabethtown College	10	The College facilities appealed to me
9	Cost of tuition, room, and board	9	It's a coeducational college
8	It is a Church of the Brethren College	8	He/she received financial assistance
7	Friends of mine went to Elizabethtown College	8	Other reasons
6	Appearance of the campus	4	Friends of mine went to Elizabethtown College
6	He/she received financial assistance	4	Appearance of the campus
6	Other reasons	3	Cost of tuition, room and board
5	The athletic program appealed to me	0	I am a former student of Elizabethtown College
5	It's a coeducational college	0	A relative attended Elizabethtown College
0	I am a former student of Elizabethtown College	0	The athletic program appealed to me

In comparing responses between incoming freshmen men and their parents found in Table 3, there are three which are ranked significantly different. The young men ranked "it is a church-related college (not necessarily Brethren)" very low in importance (17th) on why they chose Elizabethtown College compared to their parents who felt this reason for preferring Elizabethtown was quite important (2nd). Along similar lines, "the college regulations appealed" more to the parents (10th) than they did to their sons (20th).

In Table 4 the freshmen women and their parents did not differ as strongly on the importance of the reason "it is a church-related college (not necessarily Brethren)" for preferring Elizabethtown as their opposite sex did with their parents. The parents and their daughters ranked it second and ninth respectively. However, they disagreed significantly on the response "the college regulations appealed to me." The parents of daughters ranked it seventh while the young ladies unanimously placed it last. As with the men and their parents, the women ranked "the appearance of the campus" higher (3rd) than their folks did (16th).

TABLE 3

A COMPARISON OF REASONS (IN THE ORDER OF THEIR IMPORTANCE) FOR SELECTING ELIZABETHTOWN COLLEGE AS INDICATED BY FRESHMEN MEN AND THEIR PARENTS

1969

MEN		PARENTS	
Points	Item	Points	Item
169	It is a small college	79	It is a small college
107	Proximity to my home	62	It is a church-related college (not necessarily Brethren)
97	Superiority of studies in my chosen field	38	Quality of faculty and students impressed me
77	The scholastic reputation of the College	31	Proximity to our home
55	The College facilities appealed to me	29	Superiority of studies in his/her chosen field
54	It is a liberal arts college	26	The scholastic reputation of the College
53	Appearance of the campus	20	Friendliness of College personnel
50	Friendliness of admissions personnel	19	The College facilities appealed to me
49	Friends of mine went to Elizabethtown College	18	It is a liberal arts college
45	The athletic program appealed to me	13	The College regulations appealed to me
36	I received financial assistance	9	A relative attended Elizabethtown College
34	Quality of faculty and students impressed me	9	Cost of tuition, room, and board
33	Some of my relatives attended Elizabethtown College	8	It is a Church of the Brethren College
30	It's a coeducational college	7	Friends of mine went to Elizabethtown College
27	Other reasons	6	Appearance of the campus
17	It is a church-related college (not necessarily Brethren)	6	He/she received financial assistance
9	Cost of tuition, room and board	6	Other reasons
7	It is a Church of the Brethren College	5	The athletic program appealed to me
5	The College regulations appealed to me	5	It's a coeducational college

TABLE 4

A COMPARISON OF REASONS (IN THE ORDER OF THEIR IMPORTANCE) FOR SELECTING ELIZABETHTOWN COLLEGE AS INDICATED BY FRESHMEN WOMEN AND THEIR PARENTS

1969

WOMEN		PARENTS	
Points	Item	Points	Item
186	It is a small college	63	It is a small college
103	Proximity to my home	51	It is a church-related college (not necessarily Brethren)
91	Appearance of the campus	47	Quality of faculty and students impressed me
77	Quality of faculty and students impressed me	36	The scholastic reputation of the College
70	Superiority of studies in my chosen field	22	Superiority of studies in his/her chosen field
69	Friendliness of admissions personnel	18	It is a liberal arts college
64	The scholastic reputation of the College	18	The College regulations appealed to me
61	It is a liberal arts college	16	It is a Church of the Brethren College
49	It is a church-related college (not necessarily Brethren)	14	Proximity to our home
46	I received financial assistance	11	Friendliness of College personnel
35	It's a coeducational college	10	The College facilities appealed to me
31	Cost of tuition, room and board	9	It's a coeducational college
28	Other reasons	8	He/she received financial assistance
27	Some of my relatives attended Elizabethtown College	8	Other reasons
22	The College facilities appealed to me	4	Friends of mine went to Elizabethtown College
19	Friends of mine went to Elizabethtown College	4	Appearance of the campus
15	The athletic program appealed to me	3	Cost of tuition, room and board
14	It is a Church of the Brethren College	0	I am a former student of Elizabethtown College
12	The College regulations appealed to me	0	A relative attended Elizabethtown College

It is not surprising to note in Table 5 the total comparison of rankings by parents and their children that they disagreed significantly on the relative importance of three responses. "It is a church-related college (not necessarily Brethren)" received a second place by parents but only achieved a ranking of twelve by the freshmen. Perhaps somewhat more significantly is the difference of opinion on the importance of "the college regulations" receiving a rank of seven and twenty by parents and their offspring respectively. Finally, "the appearance of the campus" attracted the eye of the students (4th) more than it did their parents (17th).

TABLE 5

A COMPARISON OF REASONS (IN ORDER OF THEIR IMPORTANCE) FOR SELECTING ELIZABETHTOWN COLLEGE AS INDICATED BY ALL FRESHMEN AND THEIR PARENTS

1969

FRESHMEN		PARENTS	
Points	**Item**	**Points**	**Item**
355	It is a small college	142	It is a small college
210	Proximity to my home	113	It is a church-related college (not necessarily Brethren)
167	Superiority of studies in my chosen field	85	Quality of faculty and students impressed me
144	Appearance of the campus	62	The scholastic reputation of the College
141	The scholastic reputation of the College	51	Superiority of studies in his/her chosen field
119	Friendliness of admissions personnel	45	Proximity to our home
115	It is a liberal arts college	36	It is a liberal arts college
111	Quality of faculty and students impressed me	31	Friendliness of College personnel
82	I received financial assistance	31	The College regulations appealed to me
77	The College facilities appealed to me	29	The College facilities appealed to me
68	Friends of mine went to Elizabethtown College	24	It is a Church of the Brethren College
66	It is a church-related college (not necessarily Brethren)	14	He/she received financial assistance
65	It's a coeducational college	14	It's a coeducational college
60	Some of my relatives attended Elizabethtown College	14	Other reasons
60	The athletic program appealed to me	12	Cost of tuition, room and board
55	Other reasons	11	Friends of mine went to Elizabethtown College
40	Cost of tuition, room and board	10	Appearance of the campus
21	It is a Church of the Brethren College	9	A relative attended Elizabethtown College
17	The College regulations appealed to me	0	The athletic program appealed to me
		0	I am a former student of Elizabethtown College

There was unanimous agreement by both students and parents on the characteristics "it is a small college," "proximity to our home," "it is a liberal arts college," etc. which emerged equally high on the ratings of both groups. In general, these are the qualities which make Elizabethtown College attractive in both young people and adults. The difference between parents and their children emerges among those items which may be considered as representative of that contemporary phenomenon known as the "generation gap."

Secondly, the notion presently expressed by some students and faculty that the quality of the academic program at Elizabethtown is inferior should be instantly dismissed. Without forewarning all respondents, students and parents, invariably rated "scholastic reputation of the college," "superiority of studies in my chosen field," etc., as an important factor in preferring Elizabethtown College.

Finally, the most effective channel for familiarizing Elizabethtown College to future students are the high school principals and counselors, and the College's student body. A coordinated cultivation of high school officials and a relevant and stimulating educational program for the student shall be the strongest asset for the future of this institution.

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[1] Robert V. Hanle, *Survey of Preferential Reasons Freshmen and Parents Selected Elizabethtown College,* Institutional Studies, Elizabethtown College, Elizabethtown, Pennsylvania, 1968.

COLLABORATIVE ACTION WITH OUTSIDE RESOURCES

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College and universities mostly consist of unrelated parts where common interests and purposes relating to institutional research are obscure. Small colleges where segmentation is smallest and where the parts are more easily related, can benefit most if data are available, and if significant persons with administrative power can be identified who are willing to try to involve the whole college in the examination of findings.

Both small and large institutions are locked into a system which almost precludes change. In terms of input, students come to the college conditioned to listening to and doing what others prescribe. Faculty on the other hand, tend to perpetuate the procedure by satisfying the students' desire to listen and to do. We get caught up in the process and although some students and some professors might at times question what they are doing, they cannot hesitate or tarry because to do so is to fall behind and this always affects the standard evaluation techniques.

In such busy lives, how can research begin to have its affect, when the consideration of such information takes time and upsets routines? Do faculty, even when confronted with data, which potentially could help them, stop and assess the information and consider its implication?

The originators of the Project in Student Development were interested not only in collection of data and the reporting of findings, they envisioned a vigorous action program, viewing this approach as one which would benefit our small colleges most. They aimed at fostering innovation and experimentation based upon data deriving from the institutions themselves. They thought – disseminate and surely implications would be evident, thence change and outbreak from the trap would begin.

But, dissemination is an easy task, utilization comes a little harder. The first task rests with the researcher and this was carried forward with great enthusiasm. The second task rested with the potential user and did not develop so readily.

Not far into the program, it was clear that our measure of success would not raise cheers in the community of higher education. When the faculties of the colleges were faced with our data, even data which was descriptive of their own situations and institutions, they reacted in limited ways. We discovered that this reaction is predictable; their conservatism is evident, their scepticism large, and their questions generally meager. Dealt with by themselves they may be immovable.

As we continued to deal almost exclusively with faculty and administration, we began to reason that if indeed we wished to put into practice what we knew about learning, we needed to inject the data into the life space of these institutions in order to develop first hand experience among the faculty through use of tools and vehicles which might generate reaction and ultimately understanding.

We began to realize that we needed first to identify the individual or individuals in the institution who had specific interest in research who had, at the same time, the power to motivate others within the college to consider change and innovation through experimentation. In most cases small institutions do little research, contain docile faculty and students, and are followers rather than leaders. Nine chances out of ten, small institutions have neither the time, the capacity, or the funds to be concerned about basics. Where research does take place in small institutions, it is generally motivated by some agency outside the confines of the particular campus. We looked upon the Project as just such an agency, one which had the tools to attempt to lead institutions toward the use of findings derived from data coming from among the thirteen colleges. Traveling from one institution to another, questions were asked concerning particular problems within the colleges and these questions were asked of significant persons, people not only with interest, but also people with power to inject these findings and data into the experience of others who also might become interested in considering the implications for change, innovation and experiment.

Deans and presidents of institutions were approached, faculty members were questioned, but in most instances we recognized that the press of time and effort and tasks of these people were such that they were hesitant to take on added burdens involving open discussion and consequent responsibility to implement suggestions. Only those institutions which had a definite need responded. When an institution reaches that point where it realizes or where individuals within the institution realize that they cannot go on doing what they are doing and be successful – that they must consider new ways, new procedures, new ideas – only then will that institution be motivated to accept proffered help and tools that are available from an outside source. Our experience seems to indicate that virtually any consideration of use of research data needs an administrator's force to set direction – at least in the small college.

As we spoke to deans and presidents and faculty we looked for that response which would signal our right to involve the whole institution. One institution which had high dropout rate, latent student unrest, unhappy faculty attitudes, chose to pick up the suggestion of a student-faculty workshop based upon data that related to the institution. The time was set. Students and faculty found themselves facing a workshop which administrators had planned. Data was gathered, information passed to students, and the workshop carried through. In this particular instance, the individual involved in making the decision was the dean of the faculty. The president was interested but was too busy to become involved. The dean of the faculty was the motivating force, and without his interest and power the whole effort would have been a failure.

Although we were novices in the development of a student-faculty workshop, we plunged in, hoping that our consideration of the need to inform students about the Project was a valid first approach.

Our proposal to the dean contained the suggestion that such a workshop would increase student interest in the college, allow them to see themselves more clearly as students in the college, and recognize college problems with reference to classroom conditions as well as basic reasons for student attrition. We suggested that our data allowed students to compare the college and the student with their counterparts in the national academic community.

Second, timing was of utmost importance; we did not wish to contaminate further Project study of the college and decided to use generalities rather than to speak to those specific elements of the data still not completely analyzed by our instruments over our four year effort.

Third, we emphasized our desire to be positive in our presentations rather than pejorative, and to respond to their concerns, consequently we considered the measure of intensity of the workshop.

Fourth, we cautioned the dean that he recognize the risks involved in self-examination and explained the implications of "opening Pandora's Box" by seeking student expression.

Fifth, we asked the question, "Should we require some preliminary reading on the part of group leaders in order to allow development of background for carrying out the small group discussions?"

Sixth, what about voluntary or involuntary participation on the part of the students? If attendance were voluntary, how many students would attend and would our whole effort come to naught? Possibly we should select eight to ten small groups with approximately twenty students in each in which the main questions would be considered, and require all students to attend general sessions and a summary session.

In preparation of the final workshop schedule, the Project representative suggested that comments about on-campus opinion be sent to the Project office, consequently, four administrators of the college met and prepared a list of comments which was then sent to the Project staff as a means of enlightening them about campus attitudes. This list contained comments, such as:

1) A two-day workshop was necessary in order to allow the development of momentum.
2) The two days should be scheduled at the beginning or middle of the week to assure greater attendance.
3) Student release from courses will not work undue hardship to faculty plans and the experience may be more valuable than any one course meeting.
4) Relevant data should be used and should be distributed beforehand in order to allow formulation of opinion based upon fact.
5) Groups should not exceed fifteen students, preferably ten. They should be heterogeneous as to sex, academic classification, and educational goals. One "spark plug" should be included in each group. Faculty and students should meet separately.
6) Structure as to topics and problems should be contained in the written material presented to students, but in language familiar to students,
7) Scheduling should be flexible in anticipation of modification in response to developments during the workshop.
8) Dropout data should not be presented specifically; it may "beg the question." However, when it arises as an incidental occurrence, the information should be available for use.
9) A positive emphasis is needed to keep the discussions from leading to paralysis.
10) Questions should be formulated such as:
    a) Are the college goals congruent with the students' goals?
    b) What are appropriate goals for this college now?
    c) Is the faculty's perception of the purposes of the college congruent with student perceptions?
    d) How well are these goals achieved?
    e) Are actual achievements congruent with the stated purposes?

The staff responded to these suggestions and adjusted the program

The staff adjustment combined our proposal and the college comments in a tentative schedule suggesting two days of discussion each with the same sequence of meetings. Opening with a general session the presentation of general problems in higher education and specific college goals and data from CUES describing the college environment as perceived by students would be made. This would be followed by small group sessions in which, theoretically, these facets of the college were discussed. In the afternoon the day would end with a panel session made up of four students, two faculty group leaders and a Project panel chairman. The student panelists were to be chosen at a noon meeting of the Project staff – one from each grade level.

Groups would be formulated from each class level and would be structured in this way with the end in view that the panels chosen would reflect attitudes generated from all levels of the student body. Panelists would be instructed to present group attitudes not those of individuals – this to assure anonymity.

The second day of the workshop would follow the same pattern with a slightly different objective in view. On this day, the general presentation would include data deriving from the ECQ which examined student attitudes concerning the whole range of their experience at the college. The Project staff would encourage the students in the small groups to reflect upon what the relationships and implications these experiences had upon the previous day's information and discussion, i.e., were the students' experiences congruent with the college's goals and the students' perception of the college climate as measured by CUES.

What about the results of the general presentations and the small group discussions? Students were concerned and had responded in the small groups and the resulting effect was their willingness to express themselves freely from the floor during the panel sessions; anonymity be hanged.

The whole range of student concerns was aired in an atmosphere of free exchange. Curriculum, teaching methods, attrition, administration, faculty problems, social regulations, and religious orientation all were within the realm of student criticism. Remember that specific data presented came from research carried on within the college and had to do with college goals, environment, and student experiences, but as discussion developed, student and faculty comment went far beyond the consideration of these data. Hard data represented only the top of the iceberg; underlying feelings, latent criticisms, misunderstandings, college drift, uncertainty of students and faculty alike became elements of discussion.

There were comments:

About Curriculum

1) I find I don't know what is going on in the world. We don't really know what is going on outside.
2) We need to be able to make choices. There is not enough freedom in course selection.
3) The curriculum needs to be broadened. The wide array of required courses leaves little room for electives.
4) Why world literature? Merely because it is required?
5) Requirements take too much time.

About Teaching Methods

1) Our philosophy needn't change but our methods must if the college is to continue.
2) We are not being encouraged by our college's courses and faculty as a whole. Students should be made to think for themselves. Teachers skim through a lot of facts.
3) We are not stimulated to think through class discussions and controversial speakers.
4) There is too much of the study-lecture-test system.
5) Busy work is obsolete.
6) The lowest form of learning is memorizing facts. The teachers' effort to give good background would help students discover the facts.

About Attrition

1) Half of the students in our group have considered leaving the college.
2) Of fifteen in our group, nine have thought seriously about leaving and six already were making plans. We are too sheltered here and not prepared to face the world.

About Administration and Faculty

1) If the college could work harder to meet the needs of students on campus rather than working on glamorous publicity to attract future students, we, the students, would become the recruiters.
2) The administration seems to be afraid of change.
3) The college advertisements often seem hypocritical and pharasaical.
4) Are the faculty really open minded? Many of them overlook student opinion.
5) Faculty are insensitive to outside happenings and to what students think and feel.
6) Teachers don't know how to relate subject to reality. They are biased.
7) Teachers are too traditional. Methods used do not relate subjects to practical life.

Faculty also expressed themselves sometimes defensively:

> "There is only so much time for discussion in large classes. The faculty do not make the students regurgitate facts in order to make good grades and to be eligible to graduate."

In an informal evening session more pointed remarks developed from students:

1) The students are so busy memorizing minor points and covering the book that there is no time to comprehend the whole picture of the course and to delve into specific areas of interest. Students can always read the text, we need discussion.
2) I am tired of, bored with, being talked at.
3) Students want to know faculty members as people.
4) Certain teachers have an egotistical attitude and continue to use old fashioned teaching and testing methods. They feel student opinion doesn't matter, and believe students don't know anything.
5) Student opinions should be respected. We want to be treated as adults – some of us are married and have families. We want to discuss our ideas.
6) This student workshop is the first time that many students have really expressed themselves since they have been at this college. I have been praying for just such an opportunity on this campus.

––At the final panel session student comment reached its height of sophistication (in terms of criticism, yes, but also in terms of suggestion to change):

> "Faculty concern with students is small. There should be more informal get togethers between faculty and students. Students' ideas should be respected and considered. Student initiation of change at this college is an uphill fight all the way. In literature courses or other courses, the modern period should be emphasized just as much as any other period of time, because this period is more relevant."

> "There should be a meeting with the Board of Trustees in which students could let them know the problems of the college and do something about them. A suggestion box might help. The administrators need to know what is going on and that students are really trying to be constructive. Teacher evaluation sheets would allow constructive student criticism. Out of this, students and teachers should get together and discuss problem areas."

––The administrative reply to this was:

> "The faculty and administration are happy to know that the students are thinking and trying to be constructive. The Board is open to student affairs through a new three man student affairs committee, students should contact them. Getting students and faculty together is difficult because faculty responsibilities are often very pressing."

––Other students said:

> "On this campus, liberals are rude to more conservative people. The students are able to look at themselves and be objective. We should be accepting of others and be kind to them. We should feel worthy of standing up and speaking our mind and not be afraid of what others think."

> "The problem is two sided and changes need to be made on both sides. The teachers are more willing now than ever before to make changes. The students should start to be more specific. Specific data should be given to teachers instead of just complaining about the courses. Students should go to the teachers and talk .to them instead of just complaining about the courses. Students should go to the teachers and talk to them instead of just talking to each other. More responsibility should be given to the students academically. Class discussions and participation should be used in order to encourage students to attend."
>
> "We need an outside guidance counselor to deal with issues and personal problems."
>
> "We should use the present as a means of reaching the goal of the college for the future."

——A faculty member responded:

> "Regarding faculty availability, the faculty members have many responsibilities other than discussing issues with students. Criticism should be directed to specific issues. The best opportunity faculty members have in bridging gaps is in the classroom itself. The class time should be used for synthesis of ideas that come up in the subject matter."

In summarizing the whole effort in this workshop, it is clear that as opportunity presents itself, students and faculty are willing to participate in free expression to the benefit of all. The principle concern at this college clearly was the whole process of teaching and curriculum. As the chairman of the panel suggested in his final summary of the workshop, teacher evaluation and discussion with students concerning method is needed, attention should be given to contemporary issues in class and recognition by all personnel that the classroom is the place where views should be shared. He also pointed out the need for greater communication between faculty, students and administrators in facilitating decision-making especially as it referred to representation on the Board of Trustees. It was evident that a climate for change had been developed through dialogue, interaction, and exchange of ideas – in short, the involvement of everyone set the stage for a willing, cooperative effort.

Initial enthusiasm cools quickly and the Project staff fully expected this cooling period to deepen and dissipate. But not so, the dean responding to the excitement prepared a printed summary of the workshop for distribution to the whole college family. His analysis follows in part.

> "As a direct result of the comments and suggestions expressed by students in the student workshop, an administration-faculty committee developed a proposal for reviewing the colleges' general education requirements. The committee reviewed the requirements of many other colleges and incorporated in its proposal, up-to-date curriculum concepts, i.e., flexibility which will help meet the educational needs of the largest number of students.
>
> "It seems obvious from student comments that our requirements are indeed related to the higher attrition rate of the college. Therefore, five faculty meetings have already been devoted to the matter with many others planned. The examination continues and will consider change in the teaching methods employed by the faculty.
>
> "At student request, the groups formed during the workshop have continued through the year in order to continue rational discussions of college and student concerns."

What can we say about our effort in terms of success which could be transferred to other institutions? Our previous efforts in dissemination of the Project data had been extensive, results meager. We had supposed that somehow each institution in the study would through interested faculty or administrators see the implications of their own data and act on them. Their relative disinterest gave us much frustration; how were we to gain access to the imagination of these people. With minimal success we continued to probe and question in efforts to offer our consulting services to willing hearts. In retrospect we see that in most of our previous efforts we had generally excluded the important group in the colleges – the students themselves. Although we are not so presumptuous as to believe that students will always "turn the trick;" in this instance this body proved to be the expressive force which stimulated greater consideration, by the faculty, of what the Project had to offer.

This description of our work is not an example of planned change; as in the case of all our participating colleges, changes which occurred were incidental to our efforts. We hoped we could help, we hoped exposure would be the means by which change might occur.

We recognized the artificiality of structured presentations and sought to make that contact with that one person or group that would make the difference between apathy toward the data on the one hand, and actual utilization, even if only in a periforal way on the other. The presentation of data, even to interested parties is a minimal approach to utilization, nevertheless, using particular information as a tool to expose basic institutional problems is often a most profitable exercise.

Most interesting and probably most worthwhile to those involved in research efforts is the process by which we arrived at our measure of success which we have tried to describe.

But the conditions at the college were important, they were right.

1) The college had a great need – problem awareness.
2) The college had a link to research – available tools.
3) The college had an outside resource person interested in serving – change agent.
4) The dean and president had a great deal of anxiety about problems reflecting administrative stimulation – key people.

In effect, this experience really is only a representation of the unfreezing stage in the development of utilization. As suggested by Lippett, Watson, and Westly, this state is a necessary step toward real use of any data available for dissemination. They state three things must be prevalent. Problem awareness, desire for change, and specific desire for help. All three were there, all three worked together to bring change to a staid, traditional institution.

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COMMUNICATION OF POLICY

WHEN COMPUTERS NOT STUDENTS TAKE OVER THE UNIVERSITY

Richard F. Barton
Texas Tech University

In the novel and motion picture, **2001: A Space Odyssey,**[1] you may recall, the setting for the drama was a space voyage in a giant space ship with a crew of only four. Two of the crew lay dormant, but ready to be awakened, in coffin-like cocoons. The other two crew members occupied themselves mainly with physical training and watching the master computer that controlled everything aboard ship. The name of this computer was HAL. The conflict in the story occurred when HAL attempted to take over decision making from the two awake crew members.

HAL, the computer, would represent the extremes of an active role for Institutional Research of taking over policy making and decision functions. On the other hand, the two crew members lying dormant in their life-sustaining cocoons, controlled by HAL, would represent the extremes of a passive role for Institutional Research, being called upon only when needed either on schedule or due to unusual circumstances.

Some of the comments in this year's Forum might be summarized as follows:

1) Keith Smith, who is presently an administrator, advocated that Institutional Researchers get more involved in policy and decision making by training the administrators they deal with and by leading them through the decision making process.
2) Banks Tally, who is an administrative officer to whom the IR Office reports, looked on Institutional Research as the function that provides data and assistance to administrative officers, but it is the administrative officers themselves who decide what to do. He emphasized that these are not only two different persons, but that the skills and duties required of each are distinctly different.
3) James Montgomery, who is presently an Institutional Researcher, could be interpreted as indicating that IR as a profession has "flunked" the policy making course, if there ever were such a course. He said now is not the time for more studies to stack upon the shelf, but now is the time for action, the time to fight, the time to "pass" the policy making course, the time to participate in making behavioral changes. He recommended doing this by aggressive follow-through on the part of Institutional Researchers, toward the goal of implementation of the implications of their studies.
4) John Stecklein, who has had long experience as an Institutional Researcher, mirrored the position of Banks Tally regarding the separation, the identity, the objectivity, the neutrality, and the freedom required of Institutional Research Offices.

While Smith and Montgomery advocated an active role in policy making and decision functions for IR – although not a complete takeover of the HAL-the-computer type – Tally and Stecklein represented a more passive position, but not the extreme of lying down in a computer-maintained cocoon. These latter two strongly felt that IR was a staff activity in the organizational structure and not a line responsibility. They also felt that Institutional Researchers should avoid the "taint" of university administration.

One commentator took the position that information was neutral while this co-chairman quoted another source that **information is the capability of data to change us.**[2] This highlighted the question whether the purpose of Institutional Research is to inform or to control, again reflecting the dichotomy of the morning panelists. Discussion during both sessions and the positions of the speakers as well as the co-chairmen represented a diversity of views ranging from an information function that retains its independence and objectivity to degrees of involvement in policy and decision making activities. These degrees of involvement ranged from merely interpreting results through such activities as recommending changes based on the studies to selecting which studies should be done and then active implementation following them, hence positively guiding the university as an institution into the future.

Some of the questions raised dealt with the pursuit and dissemination of truth, with how to go about implementation, with whether IR had a moral obligation to engage in follow-through and implementation, and whether IR is indeed a line, a staff, or a service office within the organizational structure.

One prediction was that in the future computers may take over the information functions of IR and that if Institutional Research as a profession is not involved with computer developments, the role characterized here as "passive" will essentially disappear and the only remaining functional role for this group will be as "active" participants in policy making and decisions.

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[1] Arthur Charles Clark, *2001: A Space Odyssey* (New York: New American Library, 1968). (Motion picture by MGM – a Stanley Kubrick Production)

[2] Stafford Beer and Russell L. Ackoff, "In Conclusion: Some Beginnings," Chapter 14 of *Progress in Operations Research*, ed. by Julius S. Aronofsky, Volume III (New York: John Wiley & Sons, Inc., 1969). p. 529.

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THE ROLE OF THE INSTITUTIONAL RESEARCH DIRECTOR IN DECISION-MAKING

John E. Stecklein
Virginia Tech

The position I am about to take regarding the extent to which the director of an institutional research office should become involved in the actual process of making decisions about institutional policies or procedures and in the implementation of such recommendations will sound like heresy to some of you. It will sound like heresy because it does not promote the status of the institutional research officer, it does not give him the respectability of a line-relationship in the administrative hierarchy, and, in most instances, it does not give him the institutional visibility that is the natural human urge in any competitive drive toward achievement. As some of you already know, for many years I have taken, and I still take, the position that the director of an institutional research office should do everything possible to establish and maintain an image of complete objectivity and neutrality in the studies that he directs and that his office undertakes. This objectivity and neutrality should not only be evident in the design and conduct of his studies but, more importantly, in the interpretation of the results. It is my position that he should not take an open or visible role, at least, in the translation of the results of his studies into specific recommendations for policy or procedural change, but should leave that to the appropriate administrator who has been appointed to carry out that function. This is not to say that he should not feel free, **if called upon**, to express his personal opinion as to the implications of the results of a particular study, or even to suggest to the appropriate administrator alternative policies or procedures that might be changed or developed. The main point of distinction, perhaps, is the visibility of the individual in this respect. It is my contention that as soon as the research director becomes visibly identified with the promulgation of policy, and especially in the implementation thereof, he loses his identity as a research man and assumes the suspect identity of a central administrator. Thus, he may be identified as the Executive Assistant to the President, not the IR man, or the Campus Planning Officer, not the IR man, or the Provost, not the IR man. Subsequent requests for data, inquiries concerning attitudes or characteristics of faculty members, inquiries about curriculum and other aspects of the program in subsequent projects are automatically tinged with the expectation that these questions are being asked for some special reason, or that the study is being slanted in some particular direction due to the special interests of the section of central administration with whom this individual is most directly identified. To be sure, some suspicion is always present, even in studies conducted by a unit that has established an image of objectivity and neutrality, but I contend that the suspicion is much less for an office that does not have the taint of association with policy-making and implementation than in a situation where this association is clearly evident.

It seems apparent to me, too, that if a person is concerned about developing policy and implementing it, he is likely to have a preconception about the type of policy or procedure that would be most easily implemented and sold, and this preconception alone, subconsciously, can establish a limited perspective in terms of the nature of studies or data that are collected, and/or the samples to be involved in the study. In some instances, this preconception could consciously affect the design and conduct of a study, but in most instances, I would guess that the effect would be subconscious. In any event, it seems to me that there is an innate basis for bias whenever the office or administrator responsible for policy development and implementation is also the office or administrator responsible for determining the facts, the attitudes toward, or the effects of, current policies or practices.

I should add that this position does not preclude, in my mind, the opportunity for the research director to initiate studies that he thinks are needed by the institution or by central administration, either to supplement studies requested by his administrative superiors, or to point up problem areas that have not come to the attention of central administration. In fact, it would seem to me that a research office that is free from close identification with a central administrative officer is more apt to be free to follow these leads for new information and to pinpoint new problem areas than he would be if he is closely associated with the decision-making process and implementation. Certainly a good research office should not only be permitted, but encouraged to initiate studies of its own, as well as to react to requests for service by other components of the institution.

To express my position in another way, I see the institutional research director as a resource person available to the decision-making team. The decision-making team may make use of the resource person in many ways, but his primary responsibility is to propose kinds of data that should be collected or to design studies that will provide useful information to the decision-making team in solving a particular problem. The research director does not attempt to usurp the decision-making responsibilities of the administrators, nor does he want to be identified as one of the administrators who makes or implements policy. He strives to maintain a certain distance from the administrative team, in order to preserve an objective perspective about problems being considered by the administration and to avoid becoming bogged down with the day-to-day problems of implementing policy which often fall upon individuals who have become associated with the development of policy.

Let me give you a concrete example of a way in which our office has worked in the past, to illustrate this. We made a thorough analysis of factors that influenced faculty members to come to the University of Minnesota or to turn down offers to come to the University, as well as factors that influenced faculty members to leave the institution or not to leave the institution. In the study we worked with a Faculty Advisory

Committee in the formulation of the study as well as its conduct and interpretation of the findings. When the time came to write up the results of the study, the research team formulated a section that it termed, "Implications of the Study." In this section they identified in broad terms some implications of the findings as they affected the success or lack of success of the University in attracting or holding faculty members. There was some discussion among the Faculty Advisory Committee members as to whether or not the report should also include some specific recommendations for changes in University policies or procedures as a result of the study. After considerable discussion, it was agreed that the proper function of the research office was to report the implications in general terms, and the proper function of the Faculty Advisory Committee was to translate these implications into specific recommendations for changes that could be submitted to members of central administration. Specifically, one set of findings of the study related to some rather poor elements in the fringe benefits package that had been identified as a detracting factor as far as attracting new faculty to the institution were concerned. Using the implications section, the Advisory Committee wrote up its own set of specific recommendations for improvement in these fringe benefits. These recommendations were then transmitted to central administration where the president and vice-presidents acted upon the specific recommendations, accepting most of those that had been proposed, and implementing the changes that were needed to improve the fringe benefit situation. In my mind, the three components – the research office, the Faculty Advisory Committee, and the central administration – each functioned in the manner that was appropriate for its responsibilities. It would have been improper for the research director to translate the data into specific suggestions for specific dollar increases in insurance coverage, in hospitalization protection, sabbatical leave, etc., when there was a vitally interested component of the University – the Faculty Advisory Committee – involved and in a position to translate the research findings into meaningful figures that represented a faculty viewpoint. I might add that in the absence of a Faculty Committee of this type, it still seems appropriate that the actual decision be made by those who have been hired and paid to assume these responsibilities.

I have said many times that the way in which an institutional research office will function will be dictated primarily by the administrative philosophy and personality of the president of the institution. If a president of an institution perceives the institutional research officer as a left-hand man who will be expected to perform more as a vice-president or an associate vice-president than as a researcher, the research director will be involved more in the administrative functioning of the institution and less in the research capacity than he would be if the president had another conception of the institutional research function. In many such instances, the institutional research function is placed in the office of an administrative or executive assistant, or one of the vice-presidents will be asked to be the institutional research officer. It is my impression that, in nearly all such instances, the research function is relegated to a distant second in importance to the other auxiliary administrative functions that this individual will be expected to perform. The day-to-day press of problems, crises, and routine paper work inevitably shunt aside needed research and time for careful thought about important informational and data-gathering needs. In its worst circumstance, this kind of close tie with the president's office will result in the institutional research officer spending much of his time on speech-writing, correspondence-answering, and errand-running for the president. In this respect, it is even disadvantageous in some situations for the kind of research director that I have been proposing to be located in too close proximity to the president's office. If he is too handy, he is apt to be called upon to do many kinds of routine tasks that cut into his time to develop and conduct research studies.

Perhaps I should point out that the need for an objective identity is critical in an institutional research operation that is set up to serve the faculty and students as well as central administration. Obviously, if all of the activities of the institutional research office are focused upon service to central administration, with little if any attention paid to the research needs that student and faculty committees often feel, the lack of an objective identity is probably not as harmful as in the other situation where faculty and students look to the research office as a service agency that can assist them in establishing the true status quo, identifying attitudes about problems, or collecting facts or information that are relative to their concerns. The close identification of the research office with central administrative policy-making and implementation would be definitely injurious to the acceptance of that office for objective studies that the faculty might feel are important.

In conclusion, I can say that I understand the desire for increased status of the institutional research officer that comes from working with and being identified with the top echelon decision-makers. However, I truly feel that an institutional research office can be of greater assistance to such administrators if it is able to maintain sufficient distance between its operation and the decision-making and implementing process so that its perspective will not become slanted as a result of continuous exposure to the preferences and points of view of the central administrators. The director must be free of the restricting knowledge that he is responsible for recommending and/or implementing policy changes.

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AN EFFECTIVE ROLE FOR INSTITUTIONAL RESEARCH

James R. Montgomery
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Many individuals have decried the ineffectual status of the institutional research field. Here are some examples.

After the formal incorporation of the Association for Institutional Research at the time of its first Forum in the spring of 1966, Lewis B. Mayhew, in the keynote address stated:

> "Institutional research, although now well regarded, becoming affluent, and well-supplied with technical devices, has yet to make a major impact on the main course of thinking about higher education.
>
> "Institutional research workers should be more willing to extrapolate and suggest administrative and practical implications of their research rather than allowing others to draw these inferences for them. Institutional research is applied research and in a very real sense should be one form of political behavior."[1]

Mayhew's major thesis in this address was that institutional research workers have an important role to play in higher education, but that they must be more effective in their writing and research if they are to arrive at it.

Just last year we heard this general theme expressed again by Frederick deW. Bolman from the Esso Education Foundation who observed:

> "My interpretation of institutional research is that it must now more than ever guide us so that we may really see what the problems are – and then of course help us to solutions."[2]

Notice the last four words, **"help us to solutions."**

Let me add that lack of impact is not restricted to institutional research alone. The joint statement from the American Association of State Colleges and Universities and National Association of State Universities and Land-Grant Colleges, dated 1970 and entitled "Recommendations for National Action Affecting Higher Education," opens with:

> "NEEDED: NOT MORE STUDIES BUT ACTION
>
> **Study after study, recommendation after recommendation, task force report upon task force report follow each other in confusing multiplicity. But the time calls for action."**

Sanford, in his **American College** published in 1962, stressed the poverty of real innovations on college campuses.[3] Certainly, those of us who have been there can attest to the fact that conditions have not changed in the eight years since this book was published.

One may recall that Rounke and Brooks, in their volume entitled, **The Managerial Revolution in Higher Education,** reported that university presidents placed a lower estimate on the influence in policy-making of institutional researchers than did the director.[4]

Certainly a strong brief can be made for the proposition that, second to religious institutions, colleges and universities are extremely tradition-bound and slow to undertake innovation. Therefore, I submit as **point one** that institutional research has as yet failed to make a substantial contribution on or off the campus and one of the major causes of this failure is the lack of follow-through on studies.

If institutional research is to be anything but an academic exercise – a waste of paper and desk calculators – it must have an effect beyond that of increasing the budget. To be effective, research must be accompanied by development.

As **point two,** I suggest that of the problem areas available to institutional research, too much time has been spent on studies of little significance. We need fewer studies, more significant studies, and more follow-up on what happens to the conclusions and findings of those that are made.

It is probably a truism that those studies suggested by persons or committees with direct authority or power to take action on the findings have more likelihood of receiving careful review. In this era of self studies, offices of institutional research might be well advised to keep an abbreviated record of the action taken on some or all office of institutional research reports. Just how useful has our contribution really been? Lack of appropriate data is the muck of the swamp through which an institutional research worker must make his way. Let not **him** be guilty of contributing to it.

It is well recognized that the institutional setting in which the institutional researcher finds himself tends to define the meaning and nature of institutional research. An emphasis on one or another problem areas or the position accorded the office of institutional research in the organizational scheme has a strong effect upon what the institutional research office can do. But I would propose that a common denominator for all of us lies in a responsibility and a capability to **follow through.**

Let us take, for example, the fact that either the institutional researcher or some other person or group has decided that information is needed on the percentage of faculty holding each academic rank. Certainly this is a question which most offices of institutional research have been asked.

The institutional researcher, at this point, has several options open:

1) He can report the facts; for example, 40 per cent are full professors, 30 per cent associate professors and 30 per cent assistant professors.
2) He can report the facts and add trends from past information and normative data. He might even make comparisons between past trends, normative data, and his existing data.

3) A third option open is to take the information based on options one and two and make recommendations or suggestions. For example, he might suggest that the percentage of full professors is too high. The faculty is becoming top-heavy. He might find in the process that many faculty members are nearing retirement and that the institution does not have an even balance which would sustain it in the face of several retirements at one time.
4) But there is a fourth option – to strive to have his study make an impact by following through on his recommendations and conclusions.

In reviewing these four options, one can stop several places. The first place to stop might be after obtaining the basic facts; after all, another twenty projects have been requested or are underway, any one of which is potentially more important.

One can stop after the second option – that is, getting the normative and comparative facts and writing them up. One presents the facts and with some luck or skill the tables and charts attached will prove readable at least to us and other researchers. After all, what more should we do? The report is there and they, whomever **they** may be, have only to read it in order to get what information they need.

Another option is to make recommendations. We can fire them off to our bosses or boss, and then quickly move to other more important reports. If the recommendations get lost in the pressure of other business, that phenomenon is not too unusual and is simply a fact of life.

Assuming that all the evidence indicates that the finding is abnormal or the research points to conclusions or alternatives, one fourth option, of course, is to expedite acceptance and action. In this matter, we might keep in mind the penetrating comment of the Englishman, F. M. Conford, who, almost fifty years ago, effectively caught the spirit of change in higher education:

> "Nothing is ever done until everyone is convinced that it ought to be done, and has been convinced for so long that it is now time to do something else."[5]

Perhaps the Utopia for a researcher would be to find administrator, faculty member or group so enthusiastic over the report that he or they would immediately drop all else and seek to act accordingly. But just in case that does not occur, let us move to point three.

The **Third Point** is that the effective institutional researcher can make an impact, but he needs to change some of his approaches.

In this connection, he selects a study or approaches an assigned topic carefully. Studies of faculty grading patterns represent one obvious illustration. It is so simple to make a descriptive study of grading patterns that few administrators or institutional researchers have been able to resist. Yet the paucity of changed behavior, coupled with reports of the intense suspicion generated, suggest that such studies should be undertaken with extreme care and only at the request of a sizable number of faculty, who, for one reason or another, think such a study would be desirable.

Another rule of thumb before undertaking a study is to investigate if the administration has preconceived ideas of the desired outcome. One has a grave problem when the administration, which has requested a study, already knows what the results should be. Therefore, call on the administration for planning guidance to clarify this matter. It a decision has been made or almost made, the administration might more appropriately call on another member of the staff to justify a stand. It must be emphasized that studies are not always necessary for management to make effective intuitive moves.

The dictation of results has been illustrated all too effectively in recent weeks by one of Ralph Nader's investigating teams. While the complete analyses of findings have yet to be made and a reply to be received, let us look at some of the preliminary findings from a study conducted by this group on the Food and Drug Administration. Nader's Raiders charge that a "psychological atmosphere" exists which causes management to "filter out and reject evidence that does not support the administrative position already taken and to elevate even the most flimsy information that does support the administrative position." The study group further claims that "the FDA regularly tailored its scientific activities to support already arrived at administrative positions" and "scientific opinions and memoranda have been distorted, altered, misrepresented, and ignored, allowing serious potential health hazards to go unreported or uncorrected for indefensible periods of time."[6] Such findings could be duplicated in many institutions in which institutional research officers have worked. Administrators should tell an investigator when decisions have already been made and when they only want supporting evidence – not a bona fide study.

Now it should be obvious that even though a preconceived outcome is wanted, one still must report the facts even if these suggest another conclusion. Give the administrator all the data – whatever they may be. The point I am stressing is simply to clearly understand the situation. If one must change the mind of an individual, it will take much more evidence and much more persuasive determination upon your part.

Also in selecting or in accepting studies, one should recall that the more people involved, especially in the formulation of a study, the more likely they are to accept in part or in full the results. An occasional progress report, a review of research procedures, a discussion of tentative results, all may prove effective.

Once the survey, complete with conclusions, recommendations or alternatives, has been completed, one should prepare in part the plan for gaining acceptance and implementation. Ideally, as previously pointed out, one may have a boss who immediately accepts the study and acts with such force and persuasiveness that the entire institution is swept into line. But just in case this superhuman is missing, it may be necessary to proceed differently. After all, most institutions have now entered a new era of senates, committees, commissions, and what have you, which can effectively talk any idea to death.

As part of the implementation plan, get clearly in mind whether one is dealing with philosophical or analytical matters – one may have more justification for a stand on the latter than of the former. Both types of information may emerge and be intertwined. If for some reason one ends up with a survey such as one which compares the quarter system to the semester system, then the issue will be resolved on philosophical grounds or what faculty or students think works best – or upon what they are most familiar. While it might be possible to design a grandiose study to find out if there are real differences in learning for students studying under the quarter or the semester system, such a study has yet to be undertaken, and the controls necessary for it are such as to preclude one. The fact that X number of schools do it one way and Y another way will have nothing to do with the final decision – unless one likes to argue for the pure enjoyment of it, little will be accomplished in taking a strong professional stand on such matters.

Assuming that one has a survey where there are data which seem to point to a direction for movement, one might now outline a plan to a) seek the aid of the institutional research committee and b) strive through the committee or other group to find acceptance or at least reinforcement for the conclusions. c) Keep asking what can be done – what should be the next steps; and, d) press, through faculty groups or in the president's cabinet, the findings of the survey and ask how the survey findings and results might best be implemented.

Now it is possible that in the process of raising these questions, one will find disagreement. One may even end up on one or another side of an issue. If this happens, so be it. It is time to quit hiding behind the skirt of research respectability where one may ignore the day to day problems of life and of implementation.

Many surveys fit the criteria where recommendations can be made and where they should be made. At the present time, for example, many campuses face pressures to move from a five and a half day to a five-day week. Requests for such a change will certainly be heard on campuses which still operate on a five and a half day week. Hard data can be collected on what is really best for the institution and projections made of the probability of having sufficient facilities to teach students in the near and the distant future.

It might also be noted in passing that all too frequently institutional research has not been a part of the management team. Without knowledge of the information really needed, and frequently needed rapidly, it should not be too surprising that institutional research is too little and too late in response to day-to-day administrative decision-making needs. The institutional researcher working from the sideline then finds his ideas shelved or disregarded.

The institutional researcher should occupy a staff position in the institution. But all too frequently one fails to understand clearly the work of a staff.

This staff role might encompass the following: a) Studies, b) plans, c) coordinates, d) recommends, and e) follows-up. In follow-up one has the obligation to see that a decision to act does not fade into oblivion because of procrastination or the pressures of other affairs. It may be necessary to write letters or to make requests in the name of the manager who has given the approval. This does not imply that one takes over or becomes a line manager – rather that one follows through and expedites in order to prevent the loss to the institution of the approved procedure.

I have brought out three points in this paper:

1) Institutional research has failed to make a substantial contribution.
2) The field of institutional research needs fewer studies and more follow-up on findings.
3) The effective researcher makes an impact by following up on his conclusions and findings.

It is entirely possible that one cannot maintain complete neutrality in the following up and recommending roles. While one has an obligation to perform as objectively as possible when making the study, one is also duty bound once he has arrived at a conclusion firmly based on his findings to drop such objectivity and pursue the matter relentlessly. Such follow-through may be undertaken with faculty members, faculty senates, or administrators. In conclusion, one has as much obligation to make an implementation plan as to make the original survey. Having pressed forward for the change or the idea as the case may be, the effective worker in institutional research follows through sufficiently to assure that action is taken to effectuate this change.

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[2] Frederick deW. Bolman. "University Reform and Institutional Research," in Cameron Fincher, editor, *The Challenge and Response of Institutional Research* (The Association for Institutional Research, 1970). p.14.

[3] Nevitt Sanford. "Higher Education As a Social Problem," in Nevitt Sanford, ed., *The American College* (John Wiley & Sons, New York, 1962).

[4] Rounke and Brooks. *The Managerial Revolution in Higher Education* (John Hopkins Press, Baltimore, 1966.) p. 60.

[5] F. M. Conford, Microcosmographia Academica; Being a Guide for the Young Academic Politician (Cambridge, England: Dunster House, 1923). p. 32.

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THE HIGH COST OF NON-INVOLVEMENT BETWEEN THE RESEARCHER AND THE POLICY-MAKER

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Let the institutional researcher be the "developer" of information upon which decisions are to be made and the policy maker be the "user" of that information. Our concern is whether these functions can or should be undertaken simultaneously by one person, what the alternatives are, and what they cost.

While carpenters use hammers, it is not critical that hammers be designed or manufactured by carpenters, although they exercise some critical judgment in their personal selection of a tool. We have of course been convinced of the superiority of the doctrine of specialization of work (over generalization), and there persist such resulting bromides as "shoemaker, stick to your last." Thus there are many folk who might insist that the institutional researcher stick to his adding machine and tape measure.

It is not at all clear, however, that the rules of the market or of manufacture apply to administration or any other primarily information-handling task. For example, it is difficult to discover a composer of music who is not also a performer, notwithstanding the spurious counterexample of computer-generated "music". People who have been charged with the responsibility for designing modern data processing systems, i.e., means for providing information by computer, have succeeded only when they have achieved complete involvement with their "clients". This fact has been documented; further evidence is given by the relatively small share of the business owned by the service bureaus, who compete primarily with in-house data processing installations in businesses which do not wish to divorce their information capability from the business mainstream.

It is thus becoming quite clear that the key to success, if not success itself, is involvement. . . an intense and continuing dialog between the user and the developer. "Debugging" problems in this relationship has time after time been shown to be more critical to the success of a data processing system than any program to be debugged by a programmer. Thus the technical means for generating garbage are exactly the same as those required for producing something of value; the difference, which Tom Mason calls "intelligence", can only be acquired through the closest of liaison between user and developer. The informer and the informee, as the teacher and student, need to be cheek by jowl, belly to belly, and wit to wit if the desired consequence of their action is to be realized.

Here is one example of what can happen when the implied organizational imperative is denied or ignored. It is currently **de rigueur** to consider the planning problem from the program budgeting angle, which requires that programs, or outputs of a particular enterprise be defined. A certain agency recently provided a classification of programs as a target for its planning model, holding out the list of activities as a general statement about the goals of higher education institutions. It soon became clear that it would be very unlikely that any two institutions would agree that such a list could (or should) describe its outputs in any useful way. The effort was essentially scrapped in favor of a list of what institutional researchers have called "functions" for quite some time. This change is not so much a copout as a recognition that some definitions had already come from user/developer interaction, regardless of their limited usefulness as attributes of means rather than ends.

The current rage to employ the systems approach may have deepened the apparent gulf between the user and developer unnecessarily, for the former may think the latter really does have a corner on being "systematic", whatever that means, and he becomes intimidated. Now the systems approach (in the Churchman sense) doesn't mean to be orderly, straightforward, or other Franklinesque things; it is derived from the Rule: Every System is a Subsystem. The causes and effects to be considered in the examination of any problem must be evaluated in the light of their existence within some larger system, whose state may be changed unwittingly by a manipulation of the subsystem. The world is ready for this approach, attest Earth Day, although more issues are raised than answers provided. Yet the approach can be adopted by anyone who wishes to think beyond the confines of his cell.

It is submitted that professionalization of institutional research tends to separate the activity from the system it is to serve, i.e., administration. Yet such separation makes no sense at all if the IR agency freely elects the researches which it undertakes, since its decisions either do imply that an important policy issue needs investigation, or denies that any of the research is important to that larger system of which it is a part. Thus the issue is not so much whether the IR person can function as an administrator, but how far he should be involved in the formulation of those problems which he is to research. The thesis advanced here, if not defended, is that a successful project, which is one that provides true intelligence rather than a mere collection of "facts", requires user/developer involvement. Any costs of such involvement, such as communications breakdowns, etc., need to be tacked on to the real cost of information.

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REMARKS ON INSTITUTIONAL RESEARCH

Banks C. Talley, Jr.
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1. Trustees and regents select administrative personnel to lead institutions within a framework of established objectives and it is therefore the responsibility of the administrator to establish directions for the institution.
2. Administrative leaders in the past (and even some today) have operated their institutions as a result of personal positions arrived at privately or by consultation with fellow administrators, trustees, faculty, friends, etc.
3. Obviously this has not been sufficient in today's university. Therefore, most institutions are developing or have developed institutional research offices to assist in the decision-making process. This requires administrative commitment and funding!
4. As confidence grows in an institutional research office, administrative leadership turns to this office for assistance in planning and management. It should turn there more often than it does. Yet I feel there is a special role that a research office should play within the university context. Five specific points I want to make are:

a. Priority Research Projects

It is not economically feasible or possible to conduct all needed research. The research office should provide us (the administration) with information revealing the specific conditions required to carry out a needed or requested research project. It is the responsibility of the administration to decide which projects are more critical for decision-making responsibilities. This position does not imply that the research office only conducts administrative directed research, but it does suggest a priority.

b. Objective Research

If the research office is a direct part of the policy-making and/or policy-implementing administrative unit, there is a danger that personal opinions would bias the evaluation of conditions required to carry out a given research project. Even if a research office could function with complete objectivity, there would still be individuals who would question the objectivity of the research produced by an "administrative research office."

c. Mixed Functions

Energies required for policy-making and/or implementing cannot necessarily be used most effectively for research. Conflicting roles reduce the time available for both.

Competence in one area is no assurance of competence in another area. The capable researcher may be short on administrative skills or interests, especially for dealing with the political world. Similarly, the capable administrator may find either ability or interests lacking for research activities.

d. Interpretations and Evaluations

I, as an administrator, expect research findings to be interpreted or explained – particularly in terms of probable outcomes given certain conditions. This should be done without involvement in policy-making or policy-implementing roles.

e Involvement in the Total University Community

Close identification of the research office as an administrative unit limits the effectiveness of research projects that involve direct contact with the faculty and students. Students are more reluctant to cooperate or be truthful when the research activities are viewed as one of the prying arms of the administration. Thus, an identity somewhat apart from the administration may aid in developing a more favorable attitude of the faculty and students toward the administration as a whole.

In summary, an effective administrator will use the institutional research office in a meaningful way. I can assure you that the institutional research personnel will have an active and full role in the university, although they may not make the ultimate policy decisions for the institution. (Frequently the administrator doesn't either.)

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COMMUNICATION IN LONG RANGE PLANNING

SETTING INSTITUTIONAL OBJECTIVES FOR LONG RANGE PLANNING

Robert M. Clark
University of British Columbia

Introduction

Two years ago when our Association Forum met to enjoy the famed Suslow hospitality in Berkeley, California, a man stood up in the question period after a panel of institutional research professionals had spoken. He told us that this was his first AIR Forum. Recently he had been appointed president of a new state university in California. The institution had been given an attractive and spacious campus, and fairly generous, but not unlimited, money for buildings and for faculty and staff recruitment. "Now, gentlemen," he asked, "what is a university for?"

I shall not soon forget the reaction to his question. It reminded me of the occasion when a new minister was selected for our church. He asked the elders for volunteers to lead the congregation in prayer next Sunday and on subsequent Sundays. To members of the board of elders unaccustomed to such a request, the first reaction was to head for the hills in droves. So it was on this occasion in San Francisco. "Your question is unfair", protested several individuals. "You shouldn't ask us that sort of question". "Why?" queried the president. "Because", came the replies, "answering that sort of question is not our responsibility". One or two added: "We do research on specific problems that are amendable to quantitative answers".

I felt strongly that our profession should have something positive to say in answer to the question: What is your university for? At the time, however, I did not appreciate how difficult it would be to get this question seriously considered at the University of British Columbia. Ours is an institution of about 21,000 students enrolled in the current academic year.

The Report of the Senate Committee on Long Range Objectives

As an elected member of our university Senate, I had been partly responsible for getting a Senate committee established in 1968 to make recommendations on the long term objectives of the university. The committee, entirely drawn from the Senate, consisted of 12 members, 8 of whom were experienced faculty members. The other four were the Chancellor, an alumnus on the Senate, the Registrar and a graduate student. Of the faculty members four, including myself, were elected by the Senate, two appointed by the President, and two co-opted by the committee itself.

Our terms of reference were **"to propose a statement of objectives to apply to the next ten years".**[1]

It soon became apparent that most of the members, especially the chairman, had an abiding interest in organization, especially in reorganization of the administration. There was continuous interest in the curriculum, but less interest in discussing the long term objectives of the university. The committee met many times, never briefly. It made two major mistakes. First, it completed its report in a little over a year, which was far too short a time considering the range of topics with which the committee chose to deal. Second, in the course of a 120 page report, it made too many recommendations – 39 in fact – ranging in importance from the trivial to the highly important and controversial.

The Senate was unprepared for a meal of such dimensions, especially since some of the offerings did not seem very well cooked. The result has been that now, eight months later, over half of the dishes have yet to be tasted by the Senators. Some Senators have said that as far as they are concerned, the rest of the meal should be consigned to the garbage disposal unit. Much of this feeling arose because of the opposition engendered by the proposals for administrative reorganization. These involved the abolition of all faculties, and the creation of an additional layer of university government, the academic division, as part of a more complex and decentralized structure under the jurisdiction of the Board and Senate. The defeat of these recommendations, I am thankful to say, was overwhelming.

In the remainder of this paper I propose to describe the main goals of the university as advocated in the Senate Report, to list the chief positive steps taken by Senate with regard to the Report, and to speak of the present agenda of the Office of Academic Planning arising from our concern with these long term objectives.

The Main Goals of the University as Described in the Report of the Senate Committee on Long Range Objectives

As I describe these goals you will recognize that there is nothing new in them and that they are very general. You may ask, then, why bother formulating broad goals? Can they in practice be used to create a living identity for your university, or indeed for any other institution?

My answer is wholeheartedly "yes". A sharp conflict within most Canadian universities, as I see it, is between a majority of faculty who think that the main objective of their university should be to preserve and extend knowledge, and a growing minority of students who feel that the chief task of the universities should be to prepare students to engage in reforming society, by moderate or drastic measures. In these mounting controversies I am not a detached dweller on the Olympian planes of passionless objectivity. I am directly involved in three ways:

1) As an elected member of the Senate and advisor to the administration;
2) as director of the Office of Academic Planning which is concerned with practical research relevant to the objectives of the university;

3) as a committed Christian trying along with others of various outlooks to reconcile viewpoints in conflict, and to help create and maintain a community where there is often distrust and suspicion.

The chief goals of the University of British Columbia, as summarized in the Senate Committee Report are: 1) To preserve and extend knowledge, 2) to develop the individual, and 3) to serve the needs of society.

On the preservation and extension of knowledge we readily reached agreement on four points.

1. Knowledge is much broader than the accumulation of well classified and indexed information. Knowledge could be defined as the theoretical and practical understanding of an art or a science.
2. Neither the preservation nor the extension of knowledge is automatic. Knowledge to be preserved in the fullest sense has to be alive in the experience of living individuals. Knowledge is only conserved in an important yet limited sense when it is merely stored unused in libraries or on computer tapes. By analogy, an individual has a living knowledge of certain musical records when he has accustomed himself to listening imaginatively to them. But he does nothing to preserve his knowledge of music if he builds up a huge record collection to which he never listens.
3. As information in a discipline multiplies, the distance between the elementary stages and the frontiers is likely to become ever greater. Scholars of experience commonly adjust to this situation by specializing more and more narrowly. In many disciplines this makes it progressively more difficult for the young student to advance to the point where he can share meaningfully the enthusiasm of the scholar in his highly specialized research. There are two reasons for this. First, in terms of concepts to understand and techniques to learn, it is now much farther from the beginning stages of most disciplines to the frontier. Second, the work of most scholars at the frontier – and of those well behind the frontier – has become so specialized that often it is difficult for them as well as for their students to relate knowledge in their specialty to the discipline as a whole, or to the needs of society.
4. We consider that knowledge, like freedom, or wisdom, is an end in itself. But it can also contribute enormously to the other two major goals of the university.

Reaching a consensus on the development of the individual as one of the university's goals was more difficult. Opinions on the committee varied as to the extent to which this was a responsibility of the university. In the Report we wrote:

1. A second purpose of university education is to try to develop and integrate as fully as possible the inherent intellectual and creative capacity of students. Why is this regarded as worth attempting? The development of intellectual and imaginative capacity can lead to a life that is more meaningful to the individual concerned. It can extend his range of experience and increase his awareness of the intimate yet complex relationship between ideas, emotions and reality – his own and those of others. Such understanding can help the students contribute more realistically to society.
2. Self development beyond a minimum level is no more automatic than the preservation and extension of knowledge, for it is possible for an individual to pile experience upon experience without growing in awareness.
3. We who are faculty members can make a contribution towards the development of students, but much of this contribution is indirect. We seek to arouse in students enthusiasm for some discipline or some interdisciplinary studies in the university. This we are unlikely to do unless we have such enthusiasm ourselves, for in this as in other spheres a person cannot give to others what he himself does not possess. As an ideal we try to stimulate self-awareness among students, hoping in the process to achieve more of this ourselves. We try to arouse in them a love of truth for its own sake... and a love of wisdom. In these matters trying to set a good example is not enough. Students, especially in their years of graduate studies, should have ample scope for initiative to experience these values for themselves in individual and joint projects.
4. Apart from the influence of faculty members as individuals, the university influences the development of students in many ways. In the very act of allocating current and capital funds, the Board of Governors, acting on recommendations from the President, his senior advisors and the Senate, is affecting the physical and academic environment of students. For example, the siting, design and furnishing of academic buildings, cafeterias and residences are much more important than is commonly realized in influencing the total university experience of students.
5. More may be accomplished for most students outside scheduled instruction periods than within them, through independent study and discussion in student residences, seminar rooms, cafeterias, lounges, homes, car pools, and club activities on and off campus. Our university is not an extension in time and space of high school education. Nothing in what we have said is intended to minimize the responsibility of the individual for his own development during his time at our institution. We seek to create an environment on campus conducive to achieving all three of our broad goals.

Of the three major goals, divergence of opinions is widest on campus on how and to what extent the university should attempt to serve the needs of society. On the committee, however, no one represented a far left viewpoint.

1. We recognized that one of the functions of the university is to help students acquire the skills and research training useful in society. We expressed concern on two points under this heading.
   i) It is possible to give excessive attention to the

techniques in any department. If this be done it will be more the consequence of the high and increasing degree of specialization already reached, and the research interests of the faculty concerned, than an excessive concern by the Board of Governors and Senate for the demands of society.

   ii) Faced with demands to include more subjects on the campus than we can afford, we should continue to devote most of our academic resources to subjects that require a substantial component of theoretical and abstract thought, and which lie at the basis of the expansion of knowledge. And in the subjects we include in our own curriculum we concentrate on theories and principles, teaching as much of the techniques as are essential to learning. For example, we teach a course in the principles of valuation of property, but not a course on how to sell houses.

2. We rejected the idea that the university as an institution – for example the Board of Governors or the Senate – should take a stand on partisan political controversies. We agreed, however, that a much higher proportion of university faculty members should take part in political controversies. They should do this as citizens, not as spokesmen for the university.

We quoted with approval from that admirable report, **The Study of Education at Stanford**, the statement:

> "We prefer to think of the university as a kind of unbound servant. The university does, indeed, serve society; it preserves our common intellectual and cultural tradition and transmits it to future generations; it is the ground for the creation of new values, new knowledge and a new culture. In short, it is the agent of both preservation and change both necessary to a vital society."[2]

We felt that some on the campus were conceiving the quest for contemporary relevance too narrowly. We wrote:

> In research in theoretical science the relevance of certain discoveries may not be evident to those responsible for them, or to anyone else. In the humanities and social sciences we can know little of our society if we know only what exists here and now. In Canada spiritual and cultural poverty are probably even more widespread than poverty occasioned by lack of material goods and services. The prevalence of an attitude of boredom among so many adults . . . is evidence of this. Relevance is not necessarily determined by geographic or chronological factors. Plato, Moses, Jesus Christ, Michelangelo, William Shakespeare, Johann Sebastian Bach, John Stuart Mill and Karl Marx are all relevant today. So in Canada are the terms of Confederation in 1867 and the social and economic consequences of the First World War. Moreover, given the diversity of temperaments, talents and interests among students and faculty, . . . we believe that society gains by allowing the university to choose for itself what constitutes relevance. This is a heavy responsibility, and we need to be as aware as possible of its implications.

We recognized that increasing numbers of students are asking moral questions, questions many faculty members often would prefer to avoid. We believe that ours should be the sort of campus where students feel free to raise such questions with professors in informal gatherings.

Major Recommendations of the Committee

When the committee's report was presented last fall, members of the Senate chose not to discuss these goals, but preferred to concentrate on some of the main recommendations that followed from them.

1. A most important recommendation adopted by both the Senate and the Board was to set an upper limit on the number of graduate and of undergraduate students to be admitted by 1974/75. The limits are 22,500 undergraduates and 5,500 graduates. The Senate balked, however, at discussion of recommendations in the report on how these limits were to be translated into quotas for particular programs. The three relevant recommendations were tabled.

2. The Senate has jurisdiction over the academic aspects of curriculum changes. In the past the Senate has cheerfully approved of most new programs and new course proposals unless the principle of territoriality was being challenged in a flagrant way. The consequence has been that with a chronic, though hitherto expanding, limitation on funds, the real decisions on priorities always lay with the Board of Governors, who acted on advice from the President. Fortunately the Board members have been public spirited citizens of extraordinary ability and judgment. Some of them have expressed the wish that the Senate would indicate its priorities for new programs.

   The Senate committee came to the conclusion that the Senate should recommend priorities on proposed changes in curriculum, and that in order to do so it would be essential for the Senate to be furnished with estimates of the initial cost of proposed changes and their expected cost when they were fully in operation. This idea was accepted by the Senate after vigorous debate.

3. The committee also recommended that:
   i) Every five years each faculty, school and department be required to produce a statement of objectives for the next five years which would be forwarded to the President and the Senate;
   ii) every five years each faculty, school and department be required to prepare a statement comparing its objectives as set out in previous statements with its achievements in the past five years: This statement also should be sent to the President and the Senate;
   iii) every five years the performance of each department, school and faculty should be reviewed by a committee appointed by the

> Senate in the light of both the statement of five year objectives and the wider needs of the university.
>
> Included in the matters under review should be the stewardship of heads, directors and deans. Normally at least one person who is widely considered to be an authority in the area under consideration would be invited to the campus as a member of the independent review committee.
>
> The proposed statements of objectives, the internal five year assessments by each department, school and faculty, and the outside reviews should provide a more powerful incentive to long range planning than has existed in the past. If they are done with imagination and care, the departments, schools and faculties will be, of course, the chief beneficiaries. There is widespread faculty opposition to the concept of reviews being prepared for consideration by the Senate. There consequently is a risk that some of the statements of objectives, internal assessments and reviews will be expressed in bland generalities designed to soothe the susceptibilities of suspicious Senators. If this occurs, such documents will be a waste of time both for those who write and those who read them. A further advantage of the whole procedure is that it should be helpful to the President, the Senate and the Board in establishing priorities.

Accompanying the review proposals was a recommendation from the Committee that the Senate elect a standing committee to implement these proposals, to consider the review reports, and to make recommendations on them to the Senate. While the review concept was endorsed, the latter recommendation was defeated. The Senate will appoint an ad hoc committee to make recommendations on the review procedures.

Work of the Office of Academic Planning Related to the Long Term Objectives of the University.

Traditionally the Office of Academic Planning is responsible for making enrollment projections on which budgeting is based. We in the office are also involved in recommending quotas for enrollment in various programs, a task that will become more important within the next few years.

The Senate Committee on Long Range Objectives was concerned to ensure that more attention would be given to teaching than had been done by some faculty members. Two years ago the Chairman of the Board of Governors, Mr. Walter Koerner, offered a Master Teacher Award of $5,000 for the most outstanding teacher of undergraduates at the University of British Columbia. He offered the same amount for 1969/70, to be divided among two winners. The awards are administered through our office, with the decisions made by a committee consisting of the Chancellor, an alumni representative, faculty and students. The criteria we have used were based directly on the excellent work of Richard Perry at the University of Toledo.[3] My hope is that similar criteria will be used to evaluate teaching of all faculty members. I believe that the person responsible in the first instance for recommending a faculty member for promotion should be required to evaluate his or her teaching according to such criteria. This would be in addition to student evaluations, which currently are being made in numerous departments.

It is probable that our office will be involved in developing the procedures to be used in connection with the five year reviews of departments, schools and faculties. My hope is that these procedures will move us with majestic academic speed, that is, slowly, in the direction of program budgeting. The existing line by line budgets do not afford, in practice, an adequate basis for questioning of existing uses of funds. Any move in this direction will involve our office working with faculty members in trying to define the output of individual courses and programs. The Finance Department of the university would be directly involved in maintaining comparable data on all departments for budgetary purposes.

Our office is concerned with the evaluation of new academic programs, and is prepared to conduct them at the request of the Senate or of any faculty. This responsibility predates the establishment of the Senate Committee on Long Range Objectives, but is likely to increase because of growing interest among members of Senate in general curriculum questions. We are completing a review of three years' experience with an experimental program for first year students in the Faculty of Arts. This is a non-disciplinary course that gives more weight to English and other humanities than to a formal presentation of the social sciences. A student who passes this course receives credit for nine units, 60 percent of the normal load of a first year student. A similar second year program to continue on from this course will be introduced this fall. We have been requested to evaluate this program. In these two cases, and, indeed, wherever possible in making studies, we prefer to work with a committee of faculty, or faculty and students. Where this is done our office carries the responsibility for the statistical analysis and usually for writing the report.

A major concern of ours in the Office of Academic Planning is to help create an environment on campus conducive to learning. The Senate Committee on Long Range Objectives supported the idea that greater efforts should be made to create a more personalized campus environment for students and faculty.

1. To enable us to express this concern in a practical constructive way, the Board of Governors appointed two environmental psychologists to our office. One, having been a faculty member in the College of Environmental Design at the Berkeley Campus of the University of California, teaches half time in our School of Architecture. The other teaches a course in the Department of Psychology. They or I, usually they, serve on planning co-ordinating committees which are established by the President for each new building.
2. One of their tasks on these committees is to try to get the representatives of the prospective users to describe at an early stage and as accurately as possible the ways in which each building will be used. This is a

difficult task. There is a natural inclination on the part of many faculty members to want to do much of the architect's work for him, for example, to tell him the dimensions of each room in a proposed structure. More often than not they have failed to take enough time to think about the precise functions they want the new building to serve. Statements of detailed purposes to be served, for example, by a new library or a gymnasium can be used later in testing how successful new buildings are. Such information, largely obtained through questionnaires, is relevant in considering future modifications of existing buildings. It also is useful in helping to avoid the repetition of unimaginative mistakes in the construction of future buildings.

3. Since 1968 we have been concerned with priorities for new buildings in a situation where, in relation to demand, capital resources are even more limited than current income. The Senate has a committee which is advisory to the President and the Board to recommend priorities on new buildings. I am an ex officio member of this committee. Recently the committee has asked our office to take responsibility for preparing a statement of the relative merits of the various arguments for the construction of each new academic building. The committee has accepted informally a list of guidelines we prepared for evaluating building proposals. The committee, of course, must be free to make up its own mind about our recommendations just as the President and the Board must preserve their freedom of action on recommendations from the committee.

In this talk the importance of three goals – the preservation and extension of knowledge, the development of the individual, and service to the community – has been emphasized. I have tried to give some content to these general phrases as the Senate committee at this university understood them. In considering priorities for current and for capital spending I invariably refer back to these goals. Just how would one proposed expenditure as compared with another contribute to achieving each of these goals? The years ahead are threatening to the University of British Columbia as well as to other universities. This is true not only in a financial sense. More serious is the growing turmoil in society where contending values clamour for allegiance, a turmoil no university can or should escape. Yet in the midst of this, I am confident that these three goals will endure. The art of academic planning is to have the imagination to pursue these enduring goals with a sensitivity to changing needs and demands of the university community and the larger society beyond it. This is valid in an office such as ours whose role, as it should be, is only advisory. It is no less true, I believe, for those who take responsibility in greater or less degree for the future of the university.

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[1] Cyril S. Belshaw. Chairman, *Report to the Senate of the University of British Columbia, from the Senate Committee on Long Range Objectives*, 1969, Vancouver, The University of British Columbia. p. 1.

[2] Herbert L. Packer. Chairman, *The Study of Education at Stanford*, Vol. 1, "The Study and its Purpose", 1968, Stanford, Stanford University. p. 11.

[3] Richard R. Perry. *Criteria of Effective Teaching in an Institution of Higher Education, 1967*, and, *Criteria of Effective Teaching in Four Public Universities, 1969*, Toledo, Office of Institutional Research, The University of Toledo.

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CONDUCTING LONG RANGE PLANNING IN INSTITUTIONS OF HIGHER EDUCATION

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I

The whole topic of this A.I.R. session on "Long Range Planning in Public Universities" is based on the assumption that in the future there will continue to be institutions of the university type. My faith in that assumption has been shaken severely in the past two or three years. It is evident that in this country there are some people who are intent on destroying universities and colleges completely. Perhaps these forces expect something better to be contrived to serve the functions of higher education, but so far they have provided no very clear blueprint to indicate what the replacement institution might be. These forces thus far have not been able to destroy completely any institution of higher education, though they have been successful in stopping temporarily the operations of several, including measurable damage to the physical plant, considerable embarrassment and some violence to key staff members, and distinct impairment of the institution's "image" in the eyes of those who provide its financial support.

So it may not be facetious to suggest today that the very first consideration in institutional planning, either long range or short range, might well involve the physical security of the university, to protect it against take-overs, violent demonstrations, disruption of normal services, destruction of vital records and service centers, and crippling damage to campus structures. Perhaps the entire architecture of the university campus may have to be changed rather quickly from the calm and classic models followed in the past. Will it be necessary to the survival of universities that their buildings be constructed along the lines of a medieval castle, with turrets and battlements where armed guardsmen may be stationed, and the whole surrounded by a deep, wide moat, crossed only by a single drawbridge? Small steps toward this concept of suitable provisions for plant and program security have already been taken by a number of reputable institutions which feel threatened by forces not easily understood.

Long-range planning is obviously an exercise in futility unless in the future universities are going to continue in a reasonable recognizable form. Though one may at times be pessimistic about the survival of present institutional forms of higher education, the only sound course is to proceed with the planning on the assumption of some kind of survival. For long-range planning perhaps the chief lesson that needs to be learned from the disruptive circumstances of the present is that plans for the future should be sufficiently flexible to admit of modification as unforeseen developments warrant.

In the past so-called long-range plans have commonly been laid out for at least a ten-year period ahead, and sometimes for 15 or 20 years. In my observation most such plans have needed alteration in many details within five years or less after their adoption. A new "ten-year plan" every four years is about par for the course – and the four-year life-span of a plan is not necessarily correlated with the length of term in office of the State's Governor or the President of the United States.

II

One of the first questions to be asked about long-range planning in public universities is the locus of the responsibility for this function. In the not too distant past each publicly controlled university has itself been almost completely responsible for such planning as was done for its own development. Within the university encouragement to new developments came chiefly from faculty members eager to expand the influence of their own departmental specialties, with, it may be hoped charitable, some idea of the social, economic, and political usefulness of a broadened distribution in the citizenry of those who had been exposed to instruction in the particular departmental specialty. University administrators have commonly been alert to needs for expansion of programs, but they have seldom been successful in introducing a new development until the power centers in the faculty have been willing to go along with it. The negative factors in the planning for new developments in the university have been chiefly two: (1) The generally conservative tendency of most faculty members to look askance at any new development in a departmental field other than their own, with an intuitive feeling that any expansion elsewhere constitutes a threat to the relative status of one's own departmental field in the university family; and (2) lack of supporting funds. This second source of handicap may be overcome by the opening of some new source of income and, possibly more often, by the generally specious argument that "it won't cost anything."

The control over its own planning has been widely held to be an essential feature of the university's autonomy. Changes in this situation have come in the past two decades, as almost all the states have instituted central coordinating agencies for higher education. The pressure for centralized planning, at least in the area of physical plant development, has been generated to some extent by the policies of the Federal Government in making grants of funds for building construction. The Federal agencies have insisted that each state set up a central agency to distribute the funds made available to the state, and that this central agency make its institutional distribution on the basis of some well considered analyses and plans. Most of the states have also set up an agency for the general coordination (and sometimes conrol) over the entire system of public insitutions of high education. Planning on a state-wide basis has been an inherent function of such agencies.

The central agencies for coordination of higher education vary considerably from state to state in the extent of their functions and powers. Even the weaker boards have as a rule considerable influence over new developments at the institutional level, and in many states the central agency for control or coordination has become the chief agency for state-wide planning of higher education. These central coordinating agencies have in most instances been introduced by forces within the state legislature or the executive offices of state government, often with support from taxpayer groups. Seldom have the universities and their spokesmen asked for such an agency; indeed, the individual universities and their staff members have in general viewed with considerable alarm the introduction of a new state-wide coordinating agency in their state. Their chief fear has been the loss of essential institutional autonomy in university planning and operations. In most states this fear by the universities has greatly diminished with the successful operation of an effective coordinating agency. The situation, however, has naturally led to a number of investigations concerning the successes and failures of these relatively new agencies at the state level in higher education.

The most recent investigation of state-wide coordinating agencies that has come to my attention is that by Ernest G. Palola, of the University of California at Berkeley. Palola's study, to the best of my knowledge, has not yet been published, but he has reported his findings in at least two public meetings, one of which I was privileged to attend. His conclusions are germane to our topic of long-range planning in public universities.

Palola cites the following as demonstrated **strengths** of the pattern of state-wide coordinating agencies in higher education.

1. They have been effective in the control over the establishment of new campuses.
2. They have served to initiate and stimulate institutional planning.
3. They have served to extend educational opportunities for an increasingly diverse student body.
4. They have served to justify and increase the operating and capital outlay budgets of the institution.
5. Differentiation in public colleges and universities has been made possible.

To these specific strengths mentioned by Palola, I would add another from my own observations: The statewide coordinating agencies have served to increase greatly the confidence with which those who provide supporting funds receive the data about the developmental needs of the institutions of higher education.

Palola also cites a number of shortcomings of the statewide coordinating agencies, which were uncovered in his investigation, as follows:

1. They have been unable to define and eliminate duplication of programs or inadequate programs (perhaps this might be paraphrased by saying they have been more successful in exercising birth control over new programs than in killing off unneeded or unworthy programs.)
2. They have failed to integrate the public and private sectors of higher education.
3. Their state-wide planning has failed to promote cooperative efforts among the institutions.
4. They have given insufficient attention to matters of quality and substance in higher education.
5. They have served to unify the system in some states, and to fragment it in others.
6. With some notable exceptions, state-wide planning has been an **ad hoc** process.

Palola's general conclusion is substantially as follows: Educational autonomy and the level of performance of higher educational institutions have improved under state-wide coordination, in a period of rapid expansion. Institutions have been able to expand their programs in directions they desired, and to enhance their educational autonomy.

The preceding discussion has centered on the locus of responsibility for planning the programs of public higher education in a state, with specific attention to the shift that has occurred in the past two decades, from a situation in which each individual university did its own planning without much regard to the other institutions in the state, to a situation in which an agency of the state government has been given responsibility for the state-wide planning and coordination of all the state-operated programs of higher education. Now in actual practice a central state agency for coordination of higher education does not start out **de novo** to make an original plan for the state's program of higher education. First of all there is an existing program to start with, and as Palola has noted, the central agency generally has not even tried to eliminate any existing programs (or has usually been unsuccessful when it did try). For that matter, even in planning at the institutional level, university authorities are notoriously reluctant to decapitate any existing program, except under conditions of severe financial limitations.

In the second place, the successful development of a state-wide plan for higher education almost always starts with a request to the concerned institutions for a sketch of their own plans. These are then put together at the state level, and reviewed for: 1) Evidence of need for proposed new developments, 2) duplication and overlapping in the institutional proposals for new programs, 3) the financial implications of the proposals, in relation to the best estimate of the state's future resources for support, and 4) gaps in the institutional proposals with respect to coverage of the state by needed services. Although all these sorts of review are vital, the last mentioned is uniquely a function of a state-wide agency. The need for studying state-wide gaps in the proposed long-range plans of individual institutions can be well illustrated from two studies made in the mid-1950's, and one made more recently.

In one of the states studied intensively in the 1950's, the existing institutions, both public and private, were asked to estimate how many students they would plan to accommodate ten and fifteen years hence. Independent estimates were made centrally of the total number of students that would need to be served in the state. When the returns from the institutions were tabulated, it became clear that the privately controlled colleges were planning to accept in the future about the same share of the total state enrollment as they were currently serving, but the institutions under public control were not planning to increase their enrollments at anything like the rate shown in the projection for the state. Another analysis showed some significant geological areas in the state where the population was producing college students in substantially fewer numbers, proportionately, than the general average. The conclusion was that two or possibly three new state institutions needed to be developed, and also a number of junior or community colleges, to serve these neglected areas and to help care for the total enrollment that would need to be served in the then foreseeable future. Although this recommended plan was not exactly greeted with enthusiasm by the existing institutions, the state has gone ahead and followed the suggested pattern of developing new institutions and no one seems now to question the wisdom of this plan.

In the other state studied in the 1950's there has been an even more spectacular development of new universities and a comprehensive community college system in a planned order in recommended areas. The state studied more recently is also following the same pattern, and thus far the plans seem to be resulting in general improvement in the opportunities of the state's young people for higher education.

III

The success of a state-wide planning effort in higher education depends to a considerable extent on the involvement of a variety of persons interested and concerned about the services to be rendered. Certainly at the institutional level there should be participation by students, faculty, administrative staff, governing board, alumni and the general citizenry of the area served. The details of institutional planning in the academic area should extend down at least to the departmental level, and every individual on the staff who has ideas or concerns should have a channel through which to express them. The organization will vary according to circumstances in the individual university, but usually the central direction of the effort is assigned to some administrative office, such as a bureau of institutional research and planning; sometimes a small committee of faculty members, with released time, can be given the central responsibility.

The experience with long-range planning for higher education at the institutional level is much more widely distributed than that for long-range planning at the state level. Dr. Palola, in his investigation of state-wide agencies for coordination and planning, came out with some significant conclusions about state-wide planning for higher education. These are as follows:

1. We need a new breed of state-wide planners for higher education. (He does not specify details about their characteristics.)
2. Planning must receive a much higher level of responsibility among state-wide coordinating agencies than it has been given in the past.
3. Substantive planning for higher education requires participation by various kinds of experts, both inside and outside the universities and colleges.
4. In order that substantive planning occur, state officials and institutional personnel need to reassess their orientation to educational planning. State officials should look upon other specialists as the chief sources of information on matters of institutional development.
5. State-wide planning requires the full support of institutional personnel – faculty administration, board members, students.
6. There must be a relationship of trust between educational planners and all other state officials and members of the higher education family.
7. Palola cautions that state coordinating agencies should not get into questions of academic freedom. Presumably, he would reserve this area for control at the institutional level.

IV

The areas that should be covered in comprehensive planning for the development of higher education may be reviewed briefly. These areas are reasonably familiar to everybody who has had contact with higher education, so I shall mention only those features in some of the areas that currently seem to demand a re-thinking in the planning for higher education.

1. Almost every plan for higher education starts out with the students that will be served, their number and characteristics. Fairly good techniques are now available for forecasting their number, but there is less assurance about forecasts of some of the characteristics. For example, there is widespread discussion of so-called "open admission" as a policy to be followed generally in colleges and universities.
2. A second element in the planning is the needs of the economy for personnel with various kinds and levels of preparation. This is essentially an economic, rather than an educational investigation. In the American social order, it is expected that the desires of students for specific preparation, and the needs of the economy for personnel with each kind of preparation, will approach as closely as possible to a one-to-one relationship.
3. Thirdly, having been given students to educate and an economy to be served with effectively prepared personnel, programs must be devised to suit the needs and desires of students, and to satisfy the requirements of the economy. This relates particularly to the instructional programs, but in many or most institutions there are two other kinds of programs, which relate more to the needs of the economy and only secondarily to the needs of students. These are research and public service. In general these two program areas are neglected in institutional and state-wide planning and tend to be performed more or less incidentally, or in an extra-plan organization.
4. In the fourth place, given students and programs, there must be a staff to operate the programs and to care for the students. In most planning, central attention is given to one staff element, the faculty; but, a comprehensive plan should look at all the personnel requirements of the university in each of its operating areas. For example, the unionization of plant and clerical staff members poses problems that ought to be considered as a part of the comprehensive plan.
5. The administrative structure of the university is a fifth major element to be included in the long-range plan. Many long-range plans in the past have neglected the rather obvious fact, that as the scope of institutional operations increases – more students, more staff members, more programs, etc. – the

administrative organization needs to undergo corresponding modifications.

6. The sixth area, and the one on which long-range planning tends often to be rather exclusively centered, is the physical plant and equipment. The basic principle that should be followed is that program needs should determine the development of physical plant and equipment. Often it is the other way around, and program developments have to be fitted in somehow into the available plant facilities. A small, but rather vital question, concerns the designation of the various units of the physical plant; personally I think we have evidence that a building should not be named after a field of study or after a unit of program operation.
7. The seventh and final area for planning concerns the supporting funds that will be needed to carry out the proposed plan. Both current operating and capital outlay funds have to be considered. The planning is not complete until it is funded, and an overly ambitious plan has to be reworked to fit within a reasonable estimate of the available financial support.

V

By way of summary, I should like to borrow again from Palola's study. He says that in the past the central imperative of the university has been "growth"; the problem in the 1970's is academic reform. The imperatives of the 1970's require a complete reassessment of the planning for most higher education in the United States. There must be a re-study of higher education's role and application in the solution of current problems in American life.

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THE POSSIBLE USES OF THE DELPHI TECHNIQUE IN I.R. AND PLANNING IN HIGHER EDUCATION

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The Delphi Technique is a systematic means of soliciting expert opinion. It has been used extensively in a predictive mode but may also be used in a status mode. The technique attempts to reduce the possible negative effects of "personal" face to face interaction as opposed to "idea" interaction among the experts who are being interogated. To say it another way, the method is an attempt to maximize the cognative response to the problem while minimizing extraneous affective response to the other experts. It is posited that the method produces more valid information than committee work or similar procedures because the side effect of inter-personal factors is eliminated.

Characteristics of the Technique

The procedure involves successive written interogations of a panel of experts with feedback of group responses. The identity of the panelists is not revealed. Thus the technique takes on the characteristics of an anonymous debate. Feedback is generally made in terms of a median and a range, such as inter-quartile of response. Provision is made for the defense of widely divergent answers, those falling outside the range supplied. The rounds of interogation continue until consensus is reached or no change is occurring. Olaf Helmer, who along with N. C. Dalkey, developed the technique, used it in an examination of educational innovation. An excerpt from that study provides a good example of how the technique may be employed.

> "One of the questions addressed to each member of a panel of experts was to estimate the year when a machine would become available that could comprehend standard IQ tests and score above 150. The responses, as can be imagined, consisted of a set of estimates spread over a sizeable time-interval, from about 1975 to 2100. In a follow-up questionnaire a summary of the distribution of responses previously obtained was fed back to the respondents by stating the median and – as an indication of the spread of opinions – the interquartile range (that is, the interval containing the middle 50% of the responses). Each respondent was then asked to reconsider his previous answer, possibly revise it, and, if his new response lay outside the inter-quartile range, to state briefly why he thought the answer should be that much lower or that much higher than the majority opinion.

The effect of placing the onus of justifying relatively extreme responses on the respondents had the effect of causing those without strong convictions to move their estimates closer to the median, while those who felt they had a good argument for a "deviationist" opinion tended to retain their original estimate and defend it. In the next round, in addition to again summarizing the previous responses (which were now spread over a smaller interval), the respondents were given a concise summary of reasons presented in support of extreme positions. They were then asked to revise their second-round responses, taking the proffered reasons into consideration and giving them whatever weight they thought was justified. In this case, a respondent whose answer still remained outside the (new) interquartile range was required to state why he was unconvinced by the opposing argument. In the final (fourth) round, criticisms of the reasons previously offered were resubmitted to the respondents, and they had one last chance to revise their estimates in view of the counterarguments. The median of these final responses was taken to represent the nearest thing to a group consensus. In the case of the high-IQ machine, this median turned out to be the year 1990, with a final interquartile range from 1985 to 2000. In this instance, the procedure caused the median to move to a much earlier date – presumably under the influence of convincing arguments – and it caused the interquartile range to shrink considerably."[1]

In other instances a polarization of opinion has occurred, splitting the panel in their assessment of the situation.

The technique has been used in a number of different situations, most notably in the area of technological forecasting but also in areas such as educational planning (see above) prediction of manpower needs, and future developments in medicine.

Institutional Studies

Two studies are now underway which may be of interest to institutional research workers. One is a study of faculty work load (Lyons) which utilized the Delphi Technique to validate and/or refine the classifications published by the National Science Foundation.[2] This resulted in a project coordinated by R. J. Henle of St. Louis University. A second study is being conducted of intramural practice variants in dental schools (Stewart).

In the Lyons study in Round #1 the "experts" were asked to read the detailed description of the classification scheme and to a) combine any two (or more) categories or subcategories which in their opinion did not warrant separate status and define the combination category; b) redefine any of the existing categories or subcategories which in their judgment had been inappropriately defined; and, c) create and define any new categories or subcategories necessary to encompass activities which in their estimate were part of the professional life of faculty members and which were not now included in the scheme. Round #1 yielded 24 proposed modifications.

In Round #2 the "experts" were asked to indicate whether or not they agreed with each of these proposals by checking the appropriate box (i.e., "Agree" or "Disagree" in the left-hand margin). When disagreeing with a proposal they were asked to use the space provided to state their reasons. The criterion for inclusion in the "Revised Classification Scheme" was that a majority (i.e., 4 of the 6 experts) had to approve of the modification. Of the 24 proposals ellicited on Round #1, 16 were included.

In Round #3 the experts were given both a detailed description of each activity category in the "Revised Classification Scheme" and an outline of it so that they could see how the various units related to one another. They were asked to select from this list three categories or subcategories of activity which in their opinion would place maximum demands (i.e., a scale value of five) on their capacities and energies. Then using these as a reference point, to choose three activities for each successive scale value (i.e., from four to one) which would represent that degree of draw on their capabilities relative to the maximum. The experts used a total of 45 different activities to define the various scale values along the "Engagement of Capabilities" dimension.

In Round #4 they were given a listing of the professional activities selected by Delphi group members to illustrate the degree of draw on capabilities represented by each scale interval from 1 to 5. The number of respondents assigning each value (i.e., 1 to 5) to the activity was shown in parentheses. The experts were asked to review the list and then go back and put a check mark in the "5" column of those activities which in their estimate would place maximum demands (i.e., a scale value of 5) on their capacities and energies. Then using these as a reference point, to assign each of the remaining activities to that scale value which best represented its draw on their capabilities and energies relative to the maximum.

Initial examination of the revised classification and a test run with faculty indicate that it may indeed be quite workable.

Dr. Van Stewart of the University of Pittsburgh Dental School is utilizing the technique in a slightly different manner in that he is examining the problems and possibilities of the development of intramural practice organization in dental schools. The unique aspect of his use of the technique is that his panel of "experts" represents several different points of view on the same subject. This approach has been taken because of the diverse issues involving several groups which arise from the institution of an intramural practice program.

> (An over simplified definition of intramural practice is that a dental school arranges for space and equipment in or near the school for faculty members to treat private patients. Fees are then shared between the faculty member and the school on some predetermined basis.)

In order to fully explore the issues involved in IMP, the panel composition in this case includes practicing dentists, faculty, administrators and lawyers all with some relevant input concerning the subject. Specifically the panel of experts is being asked to evaluate the attributes of a model IMP program. Preliminary results indicate that the technique is applicable to a problem of this nature.

Methodological Studies

Methodological studies have been conducted concerning the technique. Dalkey's[3] study evaluated the use of controlled feedback in the improvement of estimates, it also compared face to face interaction with the Delphi procedure. He concluded that "face to face discussion tended to make group estimates less accurate" and that "the anonymous controlled feedback procedure made the group estimates more accurate." Martino[4] reviewed several panel forecasts for consistency of results where the same of similar predictions were made. His conclusions indicate that different panels of experts tend to produce about the same forecasts. This would of course tend to indicate a degree of reliability in Delphi results. The question of validity, while approached to some degree by Dalkey's study in the case of estimating what were (to the experimenter) known values, is quite another matter in forecasting. That is to say a forecast might be considered "valid" if it turns out to be confirmed by events, however, the forecast itself may lead to intervention which alters the events. Is the forecast then less valid?

Currently another aspect of the Technique is under study by the author and Dr. Norman Mulgrave. This study is examining the effect of personality variable (specifically Dogmatizim) upon responses where the subject either is or is not an expert.

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[1] Helmer, Olaf. *The Use of the Delphi Technique in Problems of Educational Innovations,* P3499, The RAND Corporation, 1966 (b). 2.

[2] National Science Foundation. *Systems For Measuring and Reporting the Resources and Activites of Colleges and Universities,* 1967 NSF 67-15.

[3] Dalkey, N. C. *The Delphi Method: An Experimental Study of Group Opinion,* The RAND Corporation, 1969.

[4] Martino, J. "The Consistency of Delphi Forecasts", *The Futurist,* 1970, Vol. 4. 63.

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CRITERIA FOR ESTABLISHMENT OF BRANCH CAMPUSES

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REASONS FOR BRANCH CAMPUSES

My particular assignment this afternoon is "the criteria for establishing branch campuses". The literature on higher education is surprisingly silent on this subject. The one most fruitful source of information was Sammartino's **Multiple Campuses.**[1] In his opening chapter, Sammartino presents seven reasons why there could possibly be a branch campus. They are:

1) The home campus is too crowded with no room for expansion. (Witness the urban college, e.g., Fordham, Temple, U. of Chicago, etc.)
2) There is an altruistic desire to overcome the geographical barrier to education by sharing one's educational facilities with other communities,
3) a less altruistic motive; the desire to achieve prestige or status,
4) a desire by some administrators to stave off competition,[2]
5) a move to overcome the obsolescence of the home campus,[3]
6) a desire to build a 'feeder' college, and
7) finally, Sammartino identifies certain individuals as eager-beavers, individuals who aspire to head a college or university, but lack the capital necessary to start one.

Lewis Mayhew adds four more reasons for the creation of a branch campus.[4]

8) The population explosion (somewhat similar to numbers 1 and 2 above).
9) The ambitions of local business and political leaders who want to change their region's basic economy from agrarian to industrial. These leaders soon realize that a skilled labor force is a necessary ingredient in attracting industries to their part of the country.
10) A wish to change, to get away from the restrictive conservatism of the traditional curriculum (the experimental college concept).
11) Conversely, the wish by some faculty and administrators to reintroduce traditional elements into the curriculum. Many religious sects wish to establish branches whose curriculum espouses its sponsor's doctrine.

I would like to add three reasons of my own.

12) An outright gift, either solicited or unsolicited. Two of the major universities in Michigan received substantial gifts from philanthropic foundations in the late 1950's and early 1960's. Michigan State University created its branch campus (Oakland) on land bequeathed by Alfred Wilson. The University of Michigan, the institution I am more familiar with, received some six or seven hundred acres from one of its regents (Frederick Matthaei). In 1958, the estate of the late Henry Ford (Fair Lane) was donated to the U. of M. A few years later the Mott Foundation provided the University with a building on Flint, Michigan's Community College campus for a senior college.
13) A college and university may expand its plant by buying out a flagging institution. It seems paradoxical that some colleges and universities should be suffering financially when millions of students are enrolling in higher education every year. Nevertheless, I am aware of one such college. There was a small Roman Catholic Seminary which could not attract enough students to justify its existence. This campus was actively considered as a site for a community college. Instead it became the home of additional county administrative offices.
14) The evolution of a branch campus from an extension center in a fast growing population area is another reason. One example of this is the University of Calgary, which was first an extension center, then became a branch campus, and finally an autonomous institution.

I would like to return to Sammartino once more. He specifically excluded two reasons for establishing branch campuses from his discussion of multiple campuses.

15) The professional or technical school. Many colleges buy package knowledge in the form of medical schools, dental schools, conservatorys of music, etc.
16) Finally, the most prevalent of branch campuses in the United States: The statewide system of higher education. New York, California, Florida, Oklahoma, Illinois, Ohio, Kentucky, Tennessee, are just a few states where public institutions of higher education are now under the aegis of a state controlling or coordinating agency.

The list presented above is quite impressive, but it misses the point. All of these items are excellent **ex post facto** explanations of branch campuses. They cannot explain the criteria employed to reach a decision to establish a branch.

AN EXAMPLE OF CRITERIA EMPLOYED WHEN DECIDING TO ESTABLISH A BRANCH

Let me illustrate the difference between an explanation and a decision-making criterion. I happen to know a president of a small, church supported liberal arts college located in rural mid-America. He knows that the population within a fifty mile radius of his campus has no hope of growing any larger in the next twenty five years. His college does not have the national visibility to attract either students or faculty from the far corners of the nation. He knows his operating costs are not going to diminish. He also knows that the financial support from his church is not likely to increase. Faced with the confluence of these developments, he has little alternative but to try to move elsewhere. He is seriously considering establishing a branch campus in a nearby metropolitan area. In effect he has decided to go where the students are. He plans to eventually shift the administrative offices from the rural location to the metropolitan one when the branch becomes larger than its **alma mater.**

In the example above, the president looked upon his geographical location, enrollment, operating costs and finances as the major factors which influenced his decision to build a branch. One has to search hard to find these factors in the list of sixteen reasons given above. Obviously our examination so far has been mainly from an **a posteriori** rather than an **a priori** point of view.

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[1] Peter Sammartino. *Multiple Campuses.* Faileigh Dickinson University Press: Rutherford, New Jersey, 1964.

[2] John Dale Russell commented on this when he wrote:

"The development of branches tends to foster a spirit of competitive empire-building among the major institutions, each racing to be the first to establish another branch of its own in a given community." *(Final Report: The Survey of Higher Education in Michigan.* Lansing, Michigan. Michigan Legislative Study Commission on Higher Education. September, 1958. p. 137.)

[3] C. Grey Austin had strong words about these institutions when he wrote:

"Over one-fourth of the colleges in this country, enrolling a million students, are educationally obsolete. . . . these colleges cannot afford libraries or laboratories adequate for graduate-school preparation or even for a liberal education relevant to the contemporary world . . . The society for which their students are prepared ceased to exist several generations ago. ("Of Size and Quality", *Journal of Higher Education.* vol. 38, #7, (October, 1967). pp. 398-400.)

[4] Lewis B. Mayhew. "The New Colleges", Chapter 1, in Baskin, Samuel (ed.). *Higher Education: Some Newer Developments.* New York, McGraw-Hill Book Co., Inc. 1965.

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CRITERIA FOR THE ALLOCATION OF RESOURCES AND EVALUATION OF RESULTS

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INTRODUCTION

It is well known that billions of dollars are spent each year on public higher education in this country. With total expenditures of this magnitude, the question is often raised as to whether higher education institutions could properly educate more students simply by absorbing them within current funding levels. Basically, the public is demanding greater justification for budget requests before additional funding is granted solely on the basis of increased enrollments. Student and faculty activism and general restlessness contribute to public skepticism. Further, other social needs (mental health, welfare, primary and secondary education, etc.) are becoming increasingly competitive in the battle for state funds. Public money is needed to provide the resources necessary to solve problems cited above plus those associated with the pollution of our environment and the deterioration of our cities. Programs in these and many other areas are receiving more favorable hearing from state legislatures than they have in the past. Because of these competing demands and the increasingly skeptical public, higher education institutions are now required to show greater accountability and budget justification, not only for new programs but also for the continued support of existing programs.

Within this general framework our discussion will focus on two principal areas of concern. First, the hierarchy of public higher education decision-making will be discussed. As greater attention is given to the allocation of resources and their effective application, the role of the decision-maker at each level of the administrative hierarchy becomes more sensitive. Second, a distinction will be drawn between the terms "criteria" for program evaluation and "measures" of resource utilization. Too often these terms are used interchangeably. This misuse may well be a factor in some of the current skepticism directed towards higher education.

HIERARCHY OF DECISION-MAKING

To meet the expanding demands for higher education, many major public universities have established branch campuses. These same institutions have then established "central" or "university" administrations. In those states with more than one state university the competition for territorial rights and the right to offer the more exotic academic programs is often prevalent among the public universities, especially when they operate under separate governing boards. To cope with competing and often unrealistic demands within the family of public higher education institutions, state legislatures have frequently established yet another level of administration, i.e., the state coordinating commission, board of higher education, or similar agency.

Consequently, a hierarchy of decision-makers in public higher education has evolved, ranging from the head of a particular academic department to the executive officer of the state-wide agency. The degree and manner in which these various levels of decision-makers can interrelate effectively will have marked influence on the success of public higher education in competing for and utilizing public funds. The respective levels – state-wide vs. governing board vs. university vs. campus vs. college vs. department – have too frequently been antagonistic rather than complementary. This antagonism, when it occurs, is due in part to a lack of clarity and consensus on the criteria which are utilized to evaluate academic programs. A second reason for this antipathy is a disagreement between individuals at different levels in the hierarchy as to which decisions are their prerogative. This is an acute problem in higher education with its tradition of "academic freedom" and low regard for administrators, much less for scientific managers, budgeters, and accountants – precisely those individuals who become important in the hierarchy and in justifying budgets and providing public accountability.

The concept of a hierarchy of decision-makers who complement each other with respect to the types of decisions they make, is appropriate and necessary for a proper treatment of criteria utilized to evaluate academic programs. Decision-makers at each level must be held accountable at the next higher level and their performance must be monitored at the higher levels. However, decision-makers at each level must have clearly defined responsibilities and authorities since their roles cannot be adequately filled by individuals at other levels. These principles are ingrained in management theory and practice and we do not question their applicability within higher educational systems.

The heirarchy of decision-making in public higher education has direct implications for the evaluation of academic programs. The complementary nature of the various levels of decision-makers requires that somewhat different questions be asked of the program at each level. (Otherwise, the hierarchial levels are redundant rather than complementary.) One obvious difference is in the level of aggregation of data. For example, a department head is most interested in resource data at the individual faculty member level; whereas, system-wide boards must be concerned with inter-institutional or inter-campus resource data. A second difference across the hierarchies is that the criteria utilized at the several levels are qualitatively different. These differences should reflect uniquely defined roles and somewhat separate interest groups. A system-wide board might ask, for example, to what degree a program meets some particular need of society. A university level administrator, on the other hand, might ask to what degree the program can and does interrelate with other academic programs within the university, and to what degree it contributes to the achievement of institutional goals.

Because each level in the hierarchy requires different evaluative criteria, it is imperative that these criteria be communicated to individuals at other (lower) levels. Each manager should be aware of the criteria on which his unit will be evaluated. Since criteria are meaningless without reference to goals, considerable attention must be given to the clarification and communication of the goals and objectives of the state-wide organization, of the separate systems of higher education, of each university, each campus, and so on. The goals must not only be communicated, they must be tested for compatibility or "goal-congruence" at each higher level.

Standards of resource input must also be determined and communicated since operating units should be evaluated and budgeted on the relationship of input to output. Communication across levels is facilitated by the use of common identifiers of resources and outputs. Such a data base provides a standard frame of reference – so necessary for effective management across all levels.

By way of illustrating the concepts discussed above, assume that a proposal for an academic program is being reviewed. What types of criteria might be used at the various decision-making levels of the hierarchy? First, at a state-wide level, the lack of adequate benchmarks has long plagued those charged with the responsibility for the allocation of resources and evaluation of results. For example, degree output might be considered a valid measure of institutional or campus performance. However, this measure must be tempered by consideration of enrollment by level, academic program, and student quality. Further, before degree output can be used as a criterion, state-level managers should help set institutional goals for degrees by level and broad area of study through demographic and manpower needs studies. Why produce degrees in an area of study if there are few, if any, employment opportunities? Manpower studies can provide at least crude estimates of future demand. These estimates should be updated regularly and used as additional criteria against which campus and university outputs and requests for new programs can be assessed.

Moving from the state to the institutional or campus level, long-range goals and more immediate output measures of such goals have been woefully lacking. Intensive consideration should be given to the nature of educational programs which are or will be offered on the campus. Too frequently the mission of campuses has been conceptualized loosely, if at all. For this reason the faculty may aspire to offer programs which are clearly outside the realm of responsibility of a given campus. The question of the mix of students and the mix of programs must be fully assessed and communicated so that campus, college and department managers are fully aware of the level to which they may expand. Within this context, campus managers have criteria by which to judge new program requests.

Until such specification of institutional and/or campus goals occurs, the development of output criteria remains haphazard at best. The matrix of outputs relevant to a given institution or campus and the weighting of each of the outputs are both clearly a function of the hierarchy of goals established for and by the institution. Moreover, the criteria utilized in the evaluation of ongoing or proposed academic programs are determined by the extent to which valid quantifiable measures exist. For instance, while the resources used for a program may be extensively measured, outputs are frequently not measured at all, or are poorly measured. Thus, decisions for continuing or increasing funds for a program will generally be related to resource input data with little, if any, reference to the resulting outputs.

Stepping further from the institutional or campus to the program level raises the concept of program clusters. Certain programs or areas of study fit together in unique combinations. These combinations should be fully explored in order to assure instructional reciprocity among programs. In too many cases educational programs grow indiscriminately, partly because of the efforts of an aggressive departmental head. As a case in point, many free-standing Ph.D. programs should be seriously questioned. Students, even at the Ph.D. level, "cross-over" in terms of their direct instructional and other needs from their "home" departments to supporting disciplines. Although this observation may seem naive, the senior author has been a member of numerous accrediting teams where it became readily apparent that while one specific discipline seems qualified to offer a program at the advanced graduate level, other areas with which that program would interrelate were not prepared to give the necessary level of support required by the primary program. Consequently, the resources available to a given program should be examined in light of those available in its related programs.

Finally, at the departmental level emphasis must be placed on judgment of the performance of particular faculty members. A pressing problem concerns the relative weights and measures of direct instruction, applied research, pure research, public service, student counseling, and other staff activities. Too often arbitrary staff-student ratios, or similar crude measures are used for measures of complicated criteria.

Each level of the hierarchy has its own unique mission to perform. Regretably, system-wide personnel have often vigorously pursued tasks inappropriate to their levels of responsibility. Hence, institutional, college, and department managers have refused to recognize that there is a proper function for such officers. Until such time as personnel at each level recognize and pursue their legitimate roles, confusion will continue within the hierarchy and potential for confrontation will exist.

CRITERIA AND MEASURES

As suggested earlier, one possible source of irritation may stem from misapplication of the terms "criteria" and "measures". Because a measure may be less valid in answering certain questions than others, measures are often misused to validate administrative policies. To rectify this misuse, a distinction has to be made between measures as pure statistics and measures used to support criteria in evaluating programs.

Measures of academic programs are descriptive and usually quantifiable indicators of program activities. Examples of typically used measures are: student-staff ratios, enrollment projections, and costs per credit hour. The aforementioned examples are indicators of resources or inputs. Unfortunately, few quantitative measures exist for program outputs. In contrast, criteria are evaluative standards which decision-makers use in reviewing academic programs. Criteria are often subjectively formulated and therefore sensitive to individual bias. A key in realizing the hierarchy of decision-making concept will be to define the criteria relevant for all levels in the hierarchy and develop measures of input and output to support the criteria.

Given that measures and criteria of academic programs are distinct concepts, in what ways do they relate? The validity or usefulness of measures is both dependent and independent of the criteria which they support. Measures must be consistent and reliable. A highly reliable and consistent measure may, however, be meaningless if it does not relate to the criteria being used in a particular program review. This raises the question of external validity. An example of a measure with high consistency but no external validity in a specific program evaluation might be the number of different counties in which undergraduate majors in a given program reside. Although such an estimate might be reliably obtained at a given institution, its usefulness for decision-makers in program evaluation may be quite limited. While the above example may be trivial, there is no doubt that much effort is being expended on the detailed collection of data and compilation of measures which have questionable external validity for program evaluation.

As with measures, criteria also possess consistency and validity. The consistency of a given criterion is derived from the nature of the academic program, e.g., the set of unique program goals. It is important that administrators have some knowledge of the outputs expected from a program even if no relevant empirical measures are available. However, the value of the program review will be reduced considerably if the criteria applied are not supported by valid empirical measures. For example, if the criterion is the contribution of a program to society-at-large, the lack of measures of the magnitude of the contribution would result in reliance upon subjective, and perhaps biased, estimates.

Decision-makers have often equated criteria and measures. That is, their evaluation of programs has been strictly in terms of input measures such as costs per credit hour. If quantitative measures of both inputs and outputs to support a criterion are not available, the criterion is either disregarded, or an implicit (and often untested) assumption is made about the program with respect to the criterion. This interchange of measures with criteria becomes especially critical at the higher management levels. Personnel at those levels have less intimate knowledge of the measures, and of the appropriateness for their association with various criteria.

SUMMARY

The foregoing discussion has emphasized the need for greater specification and development of criteria to evaluate academic programs. Integral to the evaluation process is the concept of a hierarchy of decision-making in which the various levels of the administrative hierarchy in public higher education are viewed as serving complementary roles. Also noted was the distinction between criteria and empirical measures and the implications of such a distinction for the hierarchy of decision-makers.

The authors gratefully acknowledge constructive suggestions offered by P. J. Czajkowski, University Administrative Data Processing, and S. F. Jablonsky, Institutional Studies.

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BACK-OF-THE ENVELOPE MODELS FOR PLANNING IN SMALL INSTITUTIONS

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The universities in the province of Ontario receive their operating income from three major sources:

1) Operating grants from the provincial government,
2) research grants from federal granting agencies, and
3) income from private industry and municipal governments.

Of these three sources the most significant portion is derived from operating grants from the provincial government. Since 1967-68 these grants have been allocated to the universities on the basis of a distribution-type formula. Under this formula the enrollment at each university is weighted according to a table of categories and weights ranging from one for undergraduate liberal arts students to six for Ph.D. students. The weighted enrollment is then totalled and the university receives the current value of the basic income unit (BIU) for each unit weighted enrollment. In 1969-70 the value of this basic income unit was $1,530. Therefore a university received $1,530 for each undergraduate liberal arts student enrolled in 1969-70 and $9,180 for each Ph.D. student. The following example from a hypothetical institution illustrates how the formula is applied (Figure 1).

FIGURE 1
UNIVERSITY A

Program	Enrollment	Weight	Weighted Enrollment
Liberal Arts	1,000	1	1,000
Honour Science	500	1.5	750
Engineering	500	2	1,000
Master of Science	100	4	400
TOTALS	2,100		3,150
Total Weighted Enrollment		=	3,150
Value of BIU		=	$1,530
Total Operating Grant		=	3,150 x $1,530 = $4,819,500

The weights reflect roughly the relative costs of the various types of instruction offered. It is felt that exact relationships are neither possible nor necessary. In November or December of each year the universities make a presentation collectively on the value of the basic income unit through the Committee of Presidents to the Committee on University Affairs, a cabinet-appointed group which acts as an intermediary between the provincial government and the universities. Changes in the value of the basic income unit are usually based on increases in the cost of goods and services. In 1968-69 the value was increased by 9.8 percent from $1,320 and in 1969-70 by 5.5 percent.

All the pressures for expansion and enrichment that are normally found in established universities are experienced by the small and emerging universities. (Though the upper limit is still under arbitration emerging universities are currently classified as those institutions with a weighted enrollment of less than 4,500 units.) Beyond this, small enrollments, inevitable in newer, small universities necessarily lead to higher unit costs; yet, on the other hand, such newer universities are naturally eager to broaden their scope of activities. Therefore, the Committee on University Affairs has each year in its annual recommendations proposed support above that provided for in the general operating grants formula for the emerging universities to sustain a reasonable pace of development in view of the needs of the province as a whole.

The Committee on University Affairs recommended a level of support for the 1968-69 fiscal year and tentative proposals for the next quinquennium. Following notification of these recommendations the emerging universities claimed that it would not be possible to operate under the projected levels of support and maintain any degree of academic quality.

As a result a special study was undertaken to pursue the problem of supplementary support in more detail. In one area efforts were made "to model a hypothetical university through an emerging period on the basis of certain general assumptions about class sizes, scope of program, teaching loads and cost parameters".[1]

Subsequently the Committee of Presidents progressed further with the development of macro-econometric simulation models for the emerging universities in order to assess the implications of the recommendations of this special subcommittee. A presentation of the planning model which resulted from this work is the object of this paper.

Results from the model indicated that the emerging universities in Ontario could not operate within the suggested guidelines without severely increasing average class size and in certain cases actually reducing the number of faculty.

The simulation model is essentially a form of break-even analysis. The methodology involves comparing the cost of one section to the revenue generated by the students in that section. For clarification an example will be presented together with a description of the model.

The first assumption is that all university costs can be distributed among all faculty members. Recognizing that faculty salaries consume from 40 to 50 percent of the total university operating budget and that many other costs are attributable to faculty, such as library expenditures, the rationale for this assumption becomes clearer. Division of the average faculty salary by the percentage of budget taken by faculty salaries results in a figure of total cost per faculty member. If each faculty member teaches an average of three year-long sections then the average cost per section is one-third of the total cost per faculty member.

Example 1

Average Faculty Salary . . . . = \$12,000
Salaries as a % of Budget . . . . = 40%
Total Cost per Faculty . . . . = \$12,000/.4
= \$30,000

No. of Year Long Sections per Faculty. . = 3.0
Cost per Section . . . . = \$30,000/3.0
= \$10,000

FTE Enrollment . . . . = 1,500
Average Number of Courses
per FTE Student . . . . = 5.0
Number of Course Enrollees . . . . . . = 1,500 x 5.0
= 7,500

The number of course enrollees (sometimes referred to as subject-students) is equal to the full-time equivalent enrollment multiplied by the average number of courses per student. For this simulation it is assumed that each student enrolls in the equivalent of five full courses.

For a selected staff-student ratio the number of faculty required is equal to the full-time equivalent enrollment divided by the student-staff ratio. The average section size is then equal to the number of course enrollees divided by the total number of sections (faculty multiplied by the average number of sections per faculty).

Example 2

Staff: Student Ratio . . . . = 1:15
Faculty Required . . . . = 1,500/15
= 100

Number of Sections . . . . = 100 x 3.0
Average Section Size . . . . = 7,500/300
= 25

Value of the BIU . . . . = \$1,500*
Average Weight . . . . = 1.2*
Revenue per Course Enrollee . . . . = 1/5x1.2x\$1,500
= \$360

Revenue per Section . . . . = \$360 x 25
= \$9,000

* Values assumed for this example

Each full-time equivalent student "generates" for the university an income, for the Ontario universities, equal to the product of the current value of the basic income unit (\$1,530 in 1969-70) and the average weight of the student under the operating grant formula. Since it is assumed that each student enrolls in an average of five courses the revenue per course enrollee is equal to one-fifth of the revenue generated per student. For this simulation the weighting factor is assumed to be equal to the average weight for the university (total income units divided by the full-time equivalent enrollment).

Therefore the revenue per section is equal to the revenue per course enrollee multiplied by the number of course enrollees per section or the average section size.

The difference between the cost and revenue per section represents the "loss" which must be covered either through supplementary grants or planning to adjust to some of the variables introduced in the model. In a similar manner any profit would allow for changes in the variables such as the staff-student ratios.

Example 3

Profit (loss) per Section. . . . . . . = \$9,000–10,000
= (\$1,000)

Algebraically the relationship developed in the discussion can be expressed by the following equation in which revenue is assumed equal to cost:

$$\left(R_S \times RAT/W - \bar{S}/(W \times P)\right) \times \left(E \times W/RAT \quad = 0 \quad (1)\right)$$

where $R_S \times RAT/W - \bar{S}/(W \times P)$ = profit (loss) per section
$E \times W/RAT$ = number of sections
R_S = revenue per student
RAT = staff-student ratio
$\bar{S}$ = average faculty salary
E = enrollment
P = salaries as a percent of budget
C = average number of courses per student
W = workload, average number of sections per faculty member

Equation one, which can be interpreted as "given the values of six of the seven variables, what value must be given to the seventh variable to produce total revenue equal to total cost?", is derived as follows:

Total faculty . . . . = E/RAT
Total number of sections . . . . . = (E/RAT) x W
Average section size . . . . = Total course enrollees/ Total number of sections
= $(E \times C)/(W \times E/RAT)$
= $C \times RAT/W$
Revenue per section . . . . = Revenue per section member x Average section size
= $(R_S/C) \times (C \times RAT/W)$
= $R_S \times RAT/W$
Cost per Section . . . . = Cost per Faculty/ Sections per Faculty
= $(\bar{S}/P / W$
Profit (Loss) . . . . = Profit (Loss) per Section x Number of Sections
= $\left(R_S \times RAT/W - \bar{S}/(W \times P)\right) \times \left(W \times E/RAT\right)$

This equation is a macro-econometric model which can be used for rudimentary planning purposes literally by doing the calculations on the back of an envelope. Using this model we can respond to questions such as "What revenue per student must be generated for income to match the costs derived from the following values of the other parameters?":

Average Faculty Salary . . . . = \$12,000
Salaries as a % of Budget . . . . = 40%
Sections per Faculty . . . . = 3
Enrollment . . . . = 1,500
Courses per student . . . . = 5
Staff-Student Ratio . . . . = 1:15
Revenue per Student . . . . = α

$$\left(R_S \times RAT/W - \bar{S}/(W \times P)\right) \times \left(W \times E/RAT\right) = 0$$
$$\left(\alpha \times 15/3 - 12{,}000/(3 \times .4)\right) \times \left(3 \times 1{,}500/15\right) = 0$$
$$\alpha = \$2{,}000$$

Figure 2 is an example of the type of output produced for the emerging institutions in Ontario to determine in what year supplementary grants could be reduced to zero for specified staff-student ratios.

FIGURE 2
UNIVERSITY "A"

ASSUME: Student-staff ratio .... = 16:1
Average student course load .... = 5.0
Number of year-long sections per faculty .. = 3.0

	69-70	70-71	71-72	72-73	73-74	74-75
FTE ENROLLMENT	1,834	2,289	2,721	3,116	3,507	3,892
AVERAGE FORMULA WEIGHT	1.23	1.25	1.27	1.29	1.31	1.32
VALUE OF THE BASIC INCOME UNIT	1,530	1,530	1,530	1,530	1,530	1,530
AVERAGE FACULTY SALARY	13,150	13,150	13,150	13,150	13,150	13,150
SALARIES AS A PERCENT OF BUDGET	33.7	36.5	39.9	41.8	42.3	43.5
FACULTY REQUIRED	114.6	143.1	170.1	194.7	219.2	243.2
AVERAGE SECTION SIZE	26.7	26.7	26.7	26.7	26.7	26.7
AVERAGE COST PER SECTION	13,007	12,009	10,896	10,486	10,362	10,077
AVERAGE REVENUE PER SECTION	10,049	10,213	10,376	10,540	10,703	10,785
PROFIT (LOSS) PER SECTION	–2,958	–1,796	–520	54	341	708

This simulation model was applied to the four emerging universities in Ontario. The parameters of average courses per student and average year-long sections per faculty were set at five and three, respectively. All other variables were set at values detailed in the individual universities long range forecasts. A measure of the reliability of the model was obtained by comparing the output from the simulation model to the expenses projected in the long range budgets. The results did not differ by more than $300,000 in budgets approximating five and six million dollars. This represents an error of less than 5 percent. The work to achieve these results involved no more than two hours with a slide rule compared to the long hours necessary to produce the original five year projections.

The influx of simulation models to aid in the efficient allocation of resources in education has been directed almost entirely to large institutions. This has not been without reason. These universities generally possess the in-house staff capability required for the development of simulation models. Also, the models are often not general in nature but rather are micro-models and therefore are structured closely to the peculiarities of the particular institution. Thus, changes and modifications are extremely difficult.

The greatest advantage of macro-models such as that introduced in this paper derives from the fact that the relationships expressed are very simple thereby providing quick approximation to many of the questions facing financial and planning officers in universities today. The ease in performing the calculations circumvents the need for computing facilities which together with detailed and complex information systems often form the basic requirements for the simulation models currently in use. Many of the smaller institutions do not possess either of these requisites.

We are hopeful that work can be continued in the development of management tools designed for the smaller institutions. Already we are planning to expand this model to incorporate additional decision-making parameters, such as, the number of programs offered, distribution of students into years and sectioning policy within years.

Another vital area in the development of a university is in the allocation of capital funds. We are currently working on models to be incorporated into a capital disbursement formula similar to that of the current operating formula which will take into consideration the special needs of institutions with enrollment levels below 5,000. Once again much of the work completed to date in this area is geared to the larger, more mature institution. Many of the space factors currently in vogue are not applicable to the smaller institutions since they often do not generate even minimum building sizes.

Hopefully these models will become part of the tools available to financial officers for planning and assessing the financial impact of future decisions.

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[1] "Report of the Committee on University Affairs, 1968-69", The Committee on University Affairs, Toronto, 1970.

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A STUDY OF SMALL PRIVATE COLLEGE AFFILIATIONS AND MERGERS: AN INITIAL REPORT

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This project was begun as an extension of a series of studies conducted during 1966-68 concerned with the nature and costs of cooperative efforts of private colleges in a cluster college setting – that is, physically adjacent colleges sharing facilities and/or programs.[1-5] The studies are about the plight of the hundreds of geographically and to some extent educationally, small private colleges with economic problems, and what the experiences had been so far in those few cases where a daring physical relocation had been attempted in order to overcome this isolation and to seek solutions to economic problems. We thought that the results of a study conducted to examine and describe these experiences would be of interest to many people concerned about or seeking to cope with the problems of small private colleges. This paper reports the results of the first stage of the project.

In the fall of 1968 there were 743 privately-supported four-year colleges listed in the U.S. Office of Education **Directory**. It is probably a conservative estimate to say that one-fourth to one-third of these institutions are struggling for survival, and many of these are isolated from contact with the mainstream of educational thought and activity in this country. Another substantial segment of the 743 – including many excellent institutions – is having serious economic problems. One of the very strange conditions uncovered recently in a yet unpublished study conducted in 1968 for the American Council on Education is the fact that between 1946 and 1968, despite the failure of a sizeable (but not accurately known) number of small private institutions, no less than 177 new four-year private colleges were started in this country.[6] The conditions which contribute to failure seem to be growing. Solutions, in addition to public support for private higher education, should be examined – the major reason being that in growing numbers, the struggling institutions are recognizing that educational and geographic isolation are almost as great a problem as the financial pressures. They are seeking new organizational relationships.[5] The results of examination of two such situations are reported here.

During the summer of 1969 we were fortunate enough to have the opportunity to examine in detail the circumstances and specific histories of two important collegiate relocations and affiliations. Coincidentally – and most conveniently – these two case studies could be conducted in Los Angeles, allowing prolonged in-depth study not usually possible when substantial travel is required to reach study sites. The two cases were: The recently completed move of Marymount College from Palos Verdes to the campus of Loyola University, and the planned move of Immaculate Heart College from Hollywood to a new campus adjoining The Claremont Colleges.

In each case, with the ready cooperation of the presidents and other members of the academic community, the investigators had the opportunity to examine the prior status, the process, the problems, and the resulting (or probable) circumstance of each of the new affiliations. In return, the presidents were provided with a report concerning any problems unearthed and specific suggestions for future planning or administrative adjustments. The procedure employed was simple and was applied at all four of the academic communities – Marymount, Loyola, Immaculate Heart, and Claremont. No questionnaires were used. Information was obtained by examining records and by interviewing. The records at each institution included the files of correspondence of the presidents, certain board members and other officers, as well as board and other committee minutes – all pertaining to the campus moves. The interviews included all chief administrative officers, plus some board members, faculty members and students. Newspaper accounts and news releases – both outside and student versions – were used.

The information of possible interest to those outside of the specific academic communities studied can be organized into three general categories: 1) Those items of significance about the situations before the respective moves were made, and why they were made; 2) what seems to be the result of each move in terms of successes and failures, and 3) what generalizations consistent with both situations can be made about what we think we have learned from these experiences.

In each of the cases studied, significant elements characteristic of problems, fears, and potentials which exist on hundreds of campuses elsewhere were present. Each case also had certain unique characteristics and these differences provided additional insights.

Immaculate Heart is a fair sized (600 FTE undergraduates), Catholic, women's college noted for its innovative programs. It has average but growing economic problems, a lack of space, and a slowly decreasing enrollment. This college, by comparison with hundreds of its size and type elsewhere, is not geographically isolated and not struggling for survival – but it was **isolated educationally**. It needed association and close interaction with another educational institution. It also needed a coeducational environment – at least in the classroom – if enrollment was to be maintained. This, then, is not a typical, but rather a test case to study as far as motivation for a move is concerned. Educational, more than economic, survival was the major motivation. The case is additionally interesting because it represents the movement of a religiously-oriented institution to associate closely with a group of secular institutions – a rare situation in this country. The Claremont Colleges had the motivation that an interesting, apparently excellent institution could join the five undergraduate colleges and the Claremont Graduate School, thereby expanding the complex without having to develop another college of their own. Pomona College was founded in 1887 and the decision was made in the 1920's to develop additional private, residential colleges on adjacent land. Each of the colleges – Claremont Graduate School, Scripps, Claremont Men's College, Harvey Mudd, and Pitzer – was started by the colleges existing in Claremont at the time.

Immaculate Heart, of course, stood a chance of losing many of its donors by moving away from Hollywood and joining a secular environment. They were gambling – and this is a crucial point – that the boldness of the move, the educational gains, and the notion of sharing or efficiency would attract new donors and new continuing interest in the college. If true, this would be a nationally significant item – discounted only somewhat by the fact that the area involved (Los Angeles) was a wealthy one.

The Marymount situation was different and perhaps more typical of many elsewhere. It was a small (about 300 students), Catholic, women's college, isolated (though in a metropolitan area), and in deep financial trouble, with enrollment problems. The leadership had recognized the educational isolation as a problem, but the more compelling problems were economic insufficiency and the lack of coeducational opportunities. Marymount had one advantage many other colleges contemplating a move do not have. Although the Palos Verdes location was a beautiful one, campus ties of the type built up over decades were not present to any extent. It did not stand to lose many donors since it was not moving far and chose to move to associate with another Catholic institution. But there was no assurance that the move would attract new capital support and interest new donors in the continuing life of the college. Loyola was in favor of the Marymount affiliation for a variety of reasons, including coeducation and the possibility of building a fund campaign which could stress sharing, efficiency, and increased educational opportunities.

What can we learn from what has happened in each case? The Immaculate Heart move is still in process. It has been complicated by a situation which could easily have destroyed the institution. But because of the strength and determination of the IHC leadership, it has merely slowed the process. We are referring, of course, to the change in the life style of the religious community there and the controversy surrounding disagreements with the religious hierarchy in Los Angeles. Within a few months, the status of the IHC community will change from that of a recognized order of nuns to that of a lay community of women.

Despite the loss of donors resulting from the controversy, the viability of the move as an attraction for new talent and new funds was overwhelmingly proved. Within three to four years, the IHC board was revitalized, much general interest was generated, and two-thirds of the 10.4 million dollars in needed capital for Phase I of the new campus was raised. Land had already been purchased in Claremont, and currently arrangements are being made for intercollege course registration, some joint programs, and the purchase of certain services from and with the member colleges at Claremont. What has been designed and will be initiated in 1971 is a largely residential, almost completely self-sufficient campus adjacent to the six Claremont colleges. Theoretically, of course, a college affiliating with an established cluster group or a university with fully developed central services, libraries, and the full range of programs, could assume a much more dependent stance – and our other case study is an example of this – but IHC has chosen to be (and is able to be) more economically independent. Either stance is viable; more organizational precautions being necessary in the more dependent version if the dependent unit is not to lose its identity.

Both IHC and Claremont wisely chose to associate with institutions similar enough in academic prowess, as seen by most objective and reasonable observers, to be able to establish workable relationships. Although snobbish sounding, a general level of institutional intellectual parity is important in helping to overcome the barriers usually encountered between the faculties of different colleges with respect to association, acceptance of credits, joint classes and the like.

We found no evidence that the movement of a Catholic institution to (secular) Claremont is opposed by members of the Claremont academic community. Most of the initial faculty skepticism has subsided as viewers realized that Claremont was getting "one of the better small Catholic colleges." Some faculty feel that the presence of IHC will provide a contrast and an element of needed ecumenism; other faculty members don't seem to care.

It became obvious to the investigators that the protracted period of planning has attenuated almost completely any strong positive or negative student opinions on the matter. In general, it appears that the time needed to plan and accomplish most campus relocations is sufficiently long that very few students can sustain an interest or are sufficiently affected by the move so that they react vigorously to it. Negative reaction to campus relocation is apparently dampened somewhat when the students are given an opportunity to participate in the decision and/or the subsequent planning. Of course, it helps to have the move achieve coeducational status for the campus. Most IHC and Claremont students like the idea of distinct but cooperating colleges.

The final item to mention about the IHC-Claremont move is the importance of the **community** decision at IHC to undertake the move to Claremont. Although the success of the venture to date is largely due to the courage, boldness, and judgment of a few gifted leaders, it could not have come this far without the agreement and support of the entire community. The possibility that a move to associate with another or other institutions could provide a better future for the college was perceived by a faculty and administration with a realistic, and forward looking philosophy – one rarely seen at what often tend to be inertia-bound, self-satisfied, academic communities.

The Marymount relocation to Loyola was a different situation at the start; so too, have the results been different. The move to Loyola had already been completed when this study was conducted. The gamble on financial development had, as at IHC, been successful. As contrasted with the planned IHC move, the Marymount endeavor was quite modest in size; the relocation of 300 students and associated staff to two new buildings on the Loyola campus. In magnitude this relocation is smaller than many which could be contemplated at numerous sites all over this country, but nearer the average size than is the new campus planned for

IHC. The small size physical plant was possible because Marymount chose to become quite dependent upon Loyola in the new setting – maintaining very few departments of its own, purchasing almost every service from, and using the instructional space of the much larger Loyola. This, of course, makes financial sense but must be balanced by great political power and appropriate organizational arrangements if the identity of the dependent institution is to be preserved – indeed to prevent merger, if it is not desired – and it wasn't and isn't desired at Marymount.

The move has been successful in most respects. Desired coeducation has been achieved by both institutions. The Marymount financial picture has improved. Enrollments at both institutions have risen as hoped. A joint development program serving the common elements of the institutions under a common name "Loyola-Marymount, Inc." and with a new joint board, has met with success. Momentum once achieved was maintained; the whole endeavor required only about two years including construction time for the two new buildings.

Some of the problems encountered by Marymount and Loyola should be mentioned. The first is something that most denominational schools will encounter if they consider an affiliated status and very close cooperation. It is extremely difficult to bring two (or more) religious communities together in almost any kind of close organizational relationship. As difficult as it is to promote cooperation and mutual confidence among faculties and student bodies in general, it seems to be more difficult to do the same things within and among religious groups. Secondly, the decision on the part of both schools to go ahead with the affiliation was not reached as a community decision, and at least partly because of this, the relationship between the schools is not clearly understood by all concerned. Perceptions differ widely about why the move was made and whether Loyola-Marymount is a merger or an affiliation. Finally, the lack of some neutral, truly jointly controlled services and departments has led many to feel that Marymount has been assimilated by the larger institution. All of these problems are being attacked, and the outlook regarding their solution is optimistic.

What general precepts have we gleaned from these two case studies which may be of help to others in situations similar to those which faced Marymount and Immaculate Heart? As mentioned, these investigators feel that many institutions are in similar situations and that a move to affiliate with another institution – as traumatic as that might seem – should be considered. Some isolated small colleges will probably die intellectually if they do not seek effective partnerships which provide additional academic resources. Unfortunately however, many presidents and board members are not realistic about the economic situation. Many cling to the notion that they "can make it financially" in isolation despite stagnant or falling enrollments, rising costs, and a situation in which "making it" clearly means cheating the students relative to the academic resources available for the same outlay in other combined, shared, merged, coordinated – or what have you – collegiate structures.

The major implications from the cases studied seem to be:

1) For some institutions a complete physical relocation to associate with another college or group of colleges is not only a viable alternative, but a desirable one from the standpoint of economic survival and increased educational effectiveness through shared facilities and programs.
2) If conducted under bold and sensitive leadership, decisions to relocate, cooperate, and start a new campus life can substantially stimulate the interest of private philanthropy and potential of hitherto uninterested board members.
3) Although it is not absolutely necessary, a move to relocate a campus should be a decision by the whole academic community or at least agreed to by most concerned. To reach such consensus is difficult but well worth the time invested.
4) Once begun, the process should be moved to completion as rapidly as possible. Once momentum is lost, it is difficult to regain. Financial development, program and facilities planning should proceed vigorously.
5) The faculties and staff members of the intended collegiate partners should have as much interaction as possible before the move in order to promote understanding, build mutual confidence, and stimulate planning.
6) Institutions seeking possible partners or near neighbors should strive to select institutions of the same general level of institutional maturity and those similar enough in academic prowess so that workable relationships can be readily established.
7) The organizational relationship to be established should be clearly defined and understood by all concerned. A collegiate affiliation seen by many as a merger may function as something less than an affiliation with full collegiate identities. An intended merger in which some officials conduct business under the previous rules will not achieve the new goals.
8) The faculty and staff which consider change to be a way of life will be able to handle the impact of a complete campus relocation, and virtually any new organizational relationships. A staff with collective hardening of the organizational and programmatic arteries will resist the move and the benefits which may result. But, a move made without complete agreement can still be successful; most apprehensions and even hostilities fade as people learn to trust and respect one another's abilities.
9) In the instance where two or more religiously affiliated or other colleges decide to come together, not in a merger but in a close collegiate affiliation, it is most likely that colleges with any academic and economic promise will seek equal or at least more than token or sibling status. This must be provided for in the organizational structure, in the services vehicle, and in the academic plan. Our investigations in Southern California and our discussions with those who have studied similar situations elsewhere, suggest that even those institutions which are faltering seriously are fiercely independent and most would rather die than assume another banner. What is needed is a neutral sounding name for any joint

venture – if there is to be one name – such as The Claremont Colleges, and a neutral structure or coordinating mechanism not obviously dominated by any group or college. The name is often a problem in mergers as well.

10) Most of all, institutions considering coordinate status must learn how to cooperate rather than how to compete.

This project was supported in part with funds granted by the Danforth Foundation.

[1] Stewart, Clifford T., and Hartley, J.W. *Financial Aspects of Interinstitutional Cooperation: Unit Costs in Cluster and Non-Cluster Colleges,* supported by ESSO Education Foundation, (The Claremont Colleges, June 1968). 32 pp.

[2] Stewart, Clifford T. "Studies of Cooperation in The Claremont Colleges: Academic Cooperation," in *The Instructional Process and Institutional Research,* Proceedings of the Seventh Annual Forum on Institutional Research, 1967. pp. 125-131.

[3] Kells, H.R. "A Significant Problem Deserving Study: The Cluster Colleges," in *Institutional Research and Academic Outcomes,* Proceedings of the Eighth Annual Forum on Institutional Research, 1968. pp. 97-100.

[4] Kells, H.R., and Stewart, Clifford T. *The Intercollegiate Program of Graduate Studies,* (The Claremont Colleges, December, 1966) 64 pp.; and *Journal of General Education,* Vol. XX, No. 1, 1968. pp. 1-12.

[5] Stewart, Clifford T., and Kells, H.R. "Cooperation Among Private Colleges," in *The Cluster College,* edited by Jerry G. Gaff & Assoc., Jossey-Bass Inc., Publishers, April 1970. pp. 199-215.

[6] Whaley, Dr. Randall M., Director (1967-68), Project on New Institutions conducted for the American Council on Education, unpublished data received by letter (August 1969).

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USES OF A "REFLECTION PAPER" IN SETTING GOALS AND OBJECTIVES OF A UNIVERSITY

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The purpose of this paper is to describe a recent experience with the uses of a communication device, i.e., a reflection paper, entitled "On the Purposes of the University," in setting the goals and objectives of a university. The basis for our analysis of the impact of such a paper will include 1) perceived purposes of the authors, and 2) evaluative and action significances as ascertained through the authors' perception of actions taken by a steering committee assigned the task of carrying out a goals and objectives project.

Development of the Project

Goals and objectives of Texas Tech University had been designated as one of the areas for which the Office of Planning and Analyses was to play a supportive role. However, without explicit involvement of constituencies, such as the faculty, only general information had been collected and organized by that office until the President of the University publicly announced that definite steps would be taken to develop a more definitive statement of goals and objectives for the institution. The development of a "reflection" paper had been activated before this announcement as an effort to bring about some positive action. At this time no formal or informal organization existed to undertake the comprehensive task of explicitly defining the goals and objectives of Texas Tech University beyond a short general statement adopted several years earlier by its governing board.

A parallel development, which undoubtedly influenced the development of the project, was the retaining of McKinsey & Company, a management consulting firm, to study the administrative organization of the University. Recommendations for organizaing a project to redefine goals and objectives were presented by their representatives.

Subsequently, an informal discussion group was organized. This group was chaired by the Executive Vice President, and included representatives from each college, the Office of Planning and Analyses, and McKinsey & Company.

Prior to the first meeting of the informal discussion group, copies of the reflection paper were sent to all members of the group. Dissemination before the first meeting met the requirement of providing a common basis for reflection prior to the active involvement of the group on the assigned task. In addition to the reflection paper, the Office of Planning and Analyses later distributed to the committee members selected documents relevant to the task of the committee as their work progressed. One of these, for example, was **Future of the University: A Report to the People** by the Executive Planning Committee of the University of Oklahoma.

A series of meetings were held with the informal discussion group between December, 1969, and May 1, 1970. The analysis of the uses of the reflection paper will be based upon the judgments made and actions taken during these meetings that parallel the perceived purposes in the preparation of the reflection paper.

Before examining perceptions of the uses of the reflection paper, let us review briefly some of the basic considerations that entered into its preparation.

Meaning in a Communication

A reflection paper which communicates a cluster of related ideas on a given topic is subject to the variations in meaning perceived by the readers. Because communication is a complex phenomenon that involves references and symbols that are equally complex, it is difficult to predict the character of reactions to a given communication.

What occurs in interpreting a symbolic communication is a series of chain-like decisions. The interpretations may be made from verbal signs to attitudes, interests and purposes of the reader, and then to situations or circumstances in which the reader finds himself, or the sequence may be reversed, depending upon the perceived meaning of the communication.[1]

The specific ideas presented in the reflection paper would be subject to the meanings imputed by the readers. Not only would the reader's actions be related to the meanings they perceived in the communication; but, the extent to which they would be willing to act would be conditioned by how they perceived the ideas. Vickers describes the potential for action involving change as related to the extent to which the ideas in a communication are regarded as a threat or an opportunity to the reader.[2]

Assumptions About This Communication

Several assumptions were made in the preparation of the reflection paper:

1. Consideration of the goals of a given university must occur within the context of the purposes of higher education in general.
2. The perceptual organization of the recipients would impute the meanings into the communication.
3. The selection of relevant facts and issues were a matter of the author's judgments. Judgments made by the recipient group would depend upon their perceptions of the relevance of the issues.

Perceived Potential Contributions of the Reflection Paper

1. The paper could achieve in the minds of all concerned an appreciation of the current general situation of universities. This could serve to identify essential features of goal determination and illuminate mismatch signals of what is and what appears to be evolving in the future.
2. The educative effect of the paper would lie in enlarging, for those readers unfamiliar with the ideas, their concept of the central processes of broad involvement of the constituencies, as well as dialogue

and dialectic in determining specific goals for the particular university, which all its members must share in achieving.

3. Emphasis on dialogue and dialectic could change the perceptual setting in which judgments and decisions are made.

Organization of the Reflection Paper

The analysis of the uses of the Reflection Paper in the next section can be facilitated by a review of its organization and perceived purposes for each part.

Organization of Paper	Perceived Purpose
1. Focus on the university as a general institution.	A. Shift attention from Texas Tech University to the generalized concept of the university. B. Emphasize purposes as antecedents of other decisions (i.e., resource allocation, etc.)
2. Review of historical foundations for currently accepted ideas about universities in general.	A. To place in proper perspective the evolution of these ideas. B. To raise questions in the minds of the readers about the relevance and validity of unintegrated ideas about the university.
3. Distinguish between functions and goals of the university.	A. To focus on the need for criteria in defining goals. B. To clarify issues on evaluation of university goals.
4. Raise questions about institutional goals versus goals for the constituencies of the institution.	A. To focus attention on questions of "whose" goals and the priority of these goals. B. To identify a multi-dimensional approach to redefining goals of this on any university.
5. Identify some problems associated with the integration of purposes.	A. Raise issues involving the role of administration, faculty, and students in goal redefinition. B. To specify the alternative of planned intervention as crucial to goal attainment.
6. Develop a rationale for a central focus on human beings in identifying and assessing educational outcomes.	A. Promote the idea of broad involvement of all segments of the constituency in the processes of goal determination.
7. Identify process as being significant as product in redefining institutional goals.	A. To focus on open disclosure of intent. B. To identify dialectic in open discussion as a viable notion contributing to communication. C. To postpone action on stating goals of the institution until a rational basis for investigating alternatives could be determined.

Analysis of Uses of the Reflection Paper

Discussion of the uses of the reflection paper will focus on areas in which there appear to be agreements among the members of the steering committee at this time. This analysis will be limited to symbolic messages in the reflection paper, evaluative and action significances[3] that were relevant to the perceived purposes as outlined in the preceding section. The numerical and alphabetical subscripts (i.e., 1A) appearing throughout this section identify a perceived relationship between the judgments made and perceived purposes of the reflection paper outlined above.

During the initial meeting of the steering committee, two major questions were presented to the group: 1) How does a university develop goals? and 2) What are the issues to be dealt with in redefining the goals of Texas Tech? In response to the first question, the evaluative significance was to begin with what an "ideal" university would do, and adjust the idealized approach to the realities and constraints of the situation at Texas Tech. At the same time, a judgment of action-evaluative significance was made, that each representative would invite from five to seven other faculty members to a series of informal unstructured meetings. The purpose of these meetings would be to broaden the base of involvement in identifying the issues to be dealt with in redefining the goals of Texas Tech. To facilitate this task, the group requested that additional copies of the reflection paper be sent to representatives for distribution to faculty members comprising the small groups. These three judgments are perceived to be related to perceived purposes 1A, 5B, 6A, 7B, and 7C and to a limited extent 7A.

Prior to the report of faculty groups, the discussion group was polled for their reaction to alternative issues in developing institutional goals. The results from those responding indicated agreement on the following:

1. Setting the university goals should include students, faculty, administration, alumni and to a lesser extent parents, the business community, and the professionals (4A, 6A, 5A).
2. A preliminary draft of goals before all constituencies have participated would foreclose subsequent discussion (7B, 7C).
3. Setting goals should be tempered by potentiality for innovation (3A).
4. The goals of higher education are pertinent for setting goals at Texas Tech (1A).
5. The climate for attainment of objectives is as important as the statement of objectives (8B).

Although the discussion in the informal meeting with other faculty covered a wide range of issues and probable approaches, there appeared to be agreement that the constituencies should be involved in the process of determining the goals of Texas Tech (6A). As a result, a judgment of evaluative significance was made to request members of the committee in consultation with other faculty members to submit proposals for securing views of the faculty, administrators, students, alumni, and secondary school officials on the goals of the university.

At this time, a judgment of action significance was made to revise the time table for completion of the project, that is, for publishing the redefined goals of the institution. The rationale was that the need for involvement to generate constructive dialogue on the issues was essential to developing commitment to the goals that might emerge (7C).

The recommendation from the committee on focusing responses was the use of a series of "white papers", i.e., additional reflection papers, on the major issues in defining goals with implications for Texas Tech University. The proposed invited papers are to be prepared by seasoned faculty members in collaboration with youthful faculty members. The authors were selected to represent disciplines with differing outlooks on the nature of higher education. This procedure was agreed to by the steering committee.

We perceive the uses of the invited reflection papers to be significant because the procedure to be used in focusing responses agreed to by the steering committee was essentially the same procedure used in the preparation of the original reflection paper. Moreover, these invited white papers are to be used as a basis for a series of seminars involving the faculty.

The anticipated long-range benefit of this procedure is reflected in the following statement:

> "The results of the seminar discussions would then be used by the committee as indicating issues that must be resolved, goals and objectives that Tech might adopt, etc. The seminars should also prove useful in stirring up general discussion of Tech's goals and objectives on the campus and as a pilot test of an approach to eliciting responses that might be used in the project at later stages."[4]

Other recommendations for faculty involvement include the integration and continuous revision of the invited white papers. Provisions are included for feedback and maintenance of communications through monthly circulation of white papers with requests for reactions, presentations in open meetings on the near-final statement of goals, and distribution of the final goals and objectives document to each faculty member.

Although there appears to be agreement that other constituents should be involved, to date the discussions have been focused on extensive faculty involvement. Situational influences are perceived to mitigate against a high level of commitment to involvement of the other constituents at this time.

Summary

The evaluative and action judgments made to date would seem to indicate that the availability and circulation of the original reflection paper along with other relevant documents served to:

1. Set and maintain a tone of high quality in the deliberations and recommendations relative to this project.
2. Shift attention from Texas Tech to the broader concept of the university in general.
3. Raise issues involving the role of constituencies in goal redefinition, and promote the idea of broad involvement in these processes, especially faculty involvement.
4. Influence the high priority given to open disclosure of intent and dialectic as viable elements contributing to communications.
5. Suggest a procedure that could be useful in stimulating faculty participation.[5]

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[1] For a detailed discussion of the complex nature of this phenomenon, see C.K. Ogden and I.S. Richards, *The Meaning of Meaning* (New York: Harcourt, Brace & Co., 1956). pp. 223-226.

[2] Sir Geoffrey Vickers argues that to the degree that signals are regarded as threatening to the conceptual organization of the recipient, potential for change is proportionate. The potential for change is greatest when the change is by differentiation within an established concept, and least when it involves the dissolution of a concept and distribution of its contents among other concepts. See *The Art of Judgment* (New York: Basic Books Inc., 1965). p. 185.

[3] In the theory of transactional analysis, William H. Ittelson and Hadley Cantril describe the experiences that occur within a transaction. *Evaluative significances* involve selection among alternative courses of action on the basis of the relative probability that each will lead to a desired sequence and produce desired results. *Action-evaluative significances* involve the selection of alternative courses of action once the immediate goal has been decided upon. See *Perception: A Transactional Approach* (Garden City, N.J.: Doubleday, Inc., 1954). pp. 19-23.

[4] Glenn Barnett and John Thornton, *White Paper An Approach to Eliciting Responses on Tech's Goals and Objectives,* subcommittee report submitted to the Committee on Goals and Objectives, Texas Tech University, 1970.

[5] The Appendix, a reflection paper, entitled "On the Purposes of the University, 1970," has been deleted by the Editor. If the reader wishes a copy, a limited number of the original papers are available upon request.

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EDUCATIONAL INNOVATION
Versus
TRADITIONAL REPORTING

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Accountability

In the past, institutions of higher learning have assumed certain intangibles to be the prime products of the educational system. Evolution of ideas, development of concepts and changing values are just a few of the intangibles which many believe to be at the heart of higher education and the American public has not seemed to question the leadership of the university in this province.

Now, colleges and universities – students, faculty and administration – are participating openly in bringing about changes to a broader community. These changes affect, and in some cases appear to threaten the basic tenets of American society. Hostility towards higher education is increasingly evident. Consequently, the public is calling higher education to account in terms of tangibles – products which can be more easily understood. Institutions are being forced to describe their activities more concretely. Intangible products are not quite so acceptable to the general public as they once were.

History

Two current trends in higher education may be in danger of working against each other. The conflict I see is between the increasing demand for accurate external reporting and the stewardship of funds, and the move toward greater flexibility in the internal functioning of institutions, particularly in teaching. Both forces are purportedly designed to raise the quality of higher education, yet since they derive from two separate levels of activity, they may be confounding each other. One level is necessarily concerned with auditing, accounting, controlling, and planning while the "grass roots" level is concerned with innovation in educating the student as an individual.

Reporting to state and federal agencies as well as to educational associations has become a standard and time consuming part of institutional administration. For years, the U.S. Office of Education and the State Education Departments have asked for reports of various types but recently the demand for data has created a greater sense of urgency for promptness, completeness, and accuracy. Gradually, we have seen certain federal reports adopted or molded by some state agencies to take on the role not only of statistical reports for planning but also as budgetary instruments. Public institutions have grown accustomed to reports serving budgetary purposes; however, in recent years private institutions also have been faced with external "statistical" reports serving as a basis for supplementary income. As "aid to private higher education" becomes more prevalent, the private institutions are finding themselves caught with methods of bookkeeping and reporting heretofore taken lightly in that data were retained and reported in a way that was historically convenient to the institution.

The submission of reports on various activities serves a worthwhile purpose in management discipline. In this way colleges and universities are forced to identify some of the basic elements of institutional operations. Whether or not they use these operational elements constructively in educational planning is another question. There is plenty of evidence that planning is taking a major place in the administration of higher education, but I am sure that many planning methods are not dependent upon the elements used in statistical reporting.

Historically a number of reporting programs have been developed on a national scale with extensive involvement and cooperation of Federal, state, association and institutional representatives. These early efforts were distinguished by isolated development according to particular areas of responsibility. For example, financial data specifications and definitions were developed by people working only in the financial area while student data definitions were developed by persons working in student oriented areas. These isolated efforts made the combination of data difficult if not impossible since common data elements had varying definitions.

Recently, regional and national efforts have been made to overcome this isolated approach with programs such as HEGIS, CASE, and the Henle report "Systems for Measuring and Reporting the Resources and Activities of Colleges and Universities," sponsored by NSF. A current program, WICHE, represents a concerted effort to develop a broad management information system and space analysis system. In the NSF report and WICHE projects, the stress is on the adoption by institutions of uniform definitions which may be used operationally in allocation of resources, comparison of activities, as well as in reporting and planning, thus serving the university in internal management as well as in providing external agencies with needed information.

Conflict

There are, however, trends on campuses which may not only make reporting activities difficult, in the present or currently planned modes of reporting, but may in fact render the resulting data nonrepresentative of the true movements taking place. Colleges and universities are exercising more freedom in some of their internal functions. In an effort to make the educational experience more relevant, courses are more flexible than ever before. The privilege of taking a course with variable credit hours, once extended only to graduate students, now belongs to undergraduates as well. Course Credit is awarded for properly supervised practical work in the community with little or no classroom work. The traditional method of teaching in quarters or terms may be replaced by blocks of instruction which start and end at varying points in time during the academic year. The academic year, itself, is being questioned. Tied closely to giving credit for community involvement, is the trend toward placing practical experience in the liberal arts curriculum. While college-industry programs have long been accepted in engineering and other professional colleges, liberal arts students are now seeking similar experience. More widely, students study at and use facilities of several institutions while working toward a degree.

In effect, the student is being encouraged to take more control over his program. Standardized program requirements are giving way to programs tailored to meet the specific goals of the individual student. Special honors programs and inter-disciplinary studies are increasingly common. Grading systems, which have a history of cyclical trends, also appear to be loosening. A swing toward the "pass-fail" grading or in some cases "pass only" is cutting into the traditional numeric and alphabetic systems. The tradition-time oriented flow of the student through the system may change to reflect the revised goals of institutions.

How students and programs are viewed in these new patterns should have a profound impact on our methods of reporting and planning. It is possible that external reporting, necessarily conforming to patterns imposed by the outside requests for data, may actually reflect an artificial situation. While academic flexibility is increasing, more exacting reports on credit hour counts, fields of study and enrollment are being demanded. Will the data actually reflect the life of the university? In spite of this question, however, colleges and universities must anticipate more careful accounting of their activities for financial and analytical purposes because the public is requiring that institutions be more business-like in reporting their achievements.

From another standpoint requests for data by agencies which have monetary control over institutions could exert a negative influence on internal structure and organizational flexibility. This could be particularly true of units of state systems or less affluent private institutions. Institutional policy could be formulated on the basis of outside financial aid. For example, a private institution receiving a government subsidy based on the number of degrees awarded could increase its admissions of transfer students to increase its subsidy and in doing so, change the character and standards of the institution. This in fact may be the intent of the subsidy program, and an institution hard pressed for funds may be forced to go in a direction contrary to its philosophy. Graduate schools may desire residence credit and level of achievement approved by the student's graduate committee as the sole criteria for earning a degree and determine that number of courses or credit hours mean nothing. However, if financial support is on the basis of graduate credit hours, there is a dilemma.

Standardization

The development of common definitions to describe the activities of higher education leads to a standardization which for many purposes is helpful but can create actual or potential restrictions on individual excellence in academic fields. Standardization is a process of arriving at a common denominator, intended to be the highest; however, some leveling seems bound to occur, particularly since not all qualities can be described quantitatively. If standardization is achieved to the detriment of unique possibilities, academic excellence could be compromised.

Colleges and universities have an increasing number of faculty who are action oriented and who believe that involving the institution in social issues is educationally sound. Achievements in this area are not necessarily quantifiable. The increasing amount of social research or research in the humanities should not be invariably forced into the molds developed for the physical and biological sciences. An insistence upon quantified results for financial support may serve as a constraint on the creativity which faculty and administration consider vital to teaching and research and deny the humanities deserved support. The difficulty in quantifying values, attitudes, and philosophies should not preclude these areas from financed research which is even more crucial as the university becomes a visible force in the community. I would hark back to academic programs which involve experience in social work or independent study with minimal classroom exposure.

Challenge

The challenge for those of us involved in reporting and planning is to devise means for both internal and external accounting and at the same time foster the individual character of the institution, avoiding artificial constraints on the pervasive changes in higher education. Both institutions and external agencies stand to profit by the development of methodologies for accurately describing the current campus scene. The requirements of statistical reporting for external use must coincide with the formulation of planning elements for internal use. The development of the college or university should not be restricted by obsolete reporting systems. Without some universal foresight in the design of reporting, institutions will be developing one type of data for external reporting while requiring a different dype of data for internal institutional planning. This is an exercise institutions do not need and can ill afford.

Now that management information is receiving attention in colleges and universities and considerable energy is being devoted to establishing the mechanics of a management information system, it is appropriate to establish such a system on bases which reflect the true changes in educational programs and approaches.

Recommendations

How can agencies develop reporting techniques which will enable them to assess accurately the trends in higher education? How can institutions develop operational and planning data which also reflect trends to outside agencies? Here are some possible suggestions.

1. Projects like WICHE and Stanford should be strongly supported. Extensive work still needs to be done in defining elements of higher education and more clearly identifying inputs and outputs and the limitations of each. Although the results of these efforts are needed now, it is more important that they be thorough and that these groups be given time to work out the problems.
2. Agencies who need to collect data from institutions should include on their staffs college personnel who have been given leaves to serve, to participate actively in the development and refinement of data collection methodology and instrumentation. Such persons

should be from the institution's operational offices, such as the treasurer, financial aids, admissions, academic departments and deans' offices. A limitation such as one year should be established for the participation of individual academicians so that new ideas and current knowledge contribute to the establishment of data collection systems.

3. Scholars in schools of public administration and schools of education who are expert in the fields of organizational behavior should concentrate on the problems of articulation, and communication between governmental agencies and educational institutions.

Summary

Alertness to problem areas in the reporting situation is essential for people in the field of institutional research since this group of professionals is most intimately involved with the quantitative description of the institution. Institutional research workers need to look very realistically at what is happening within their institutions, without relying on static formulae. In turn, it is mandatory that external educational agencies seek first hand information about "grass roots" changes in order to understand and plan at the state and Federal levels for growth and change in higher education. We have the avenues for making innovations. Students claim they have no entre into the inner circle where decisions are made; therefore they resort to confrontation techniques. I would maintain that institutional research people have access to the decision making process and can influence alternatives in reporting and planning. Although the current trends – more extensive external reporting and more flexibility in internal educational programs – are not necessarily opposed, an awareness now of the potential conflict can provide the basis for significant advances in the field of educational planning at all levels.

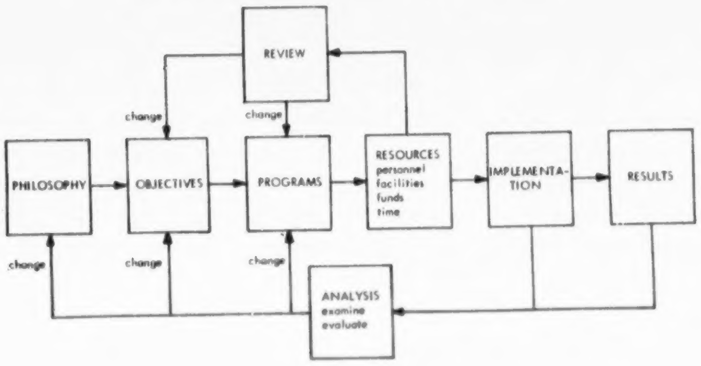
The writer wishes to acknowledge the contribution of Mrs. Patricia Mattes in developing this paper.

MODELS, SIMULATION AND THE COMPUTER – H.E.L.P. FOR COLLEGE PLANNING

William D. Sutterfield
Park College

There are a number of approaches to planning in higher education. Several of them, however, follow essentially the process represented in illustration A. Theoretically, the institution first identifies its philosophy. This can be thought of as the "why" of its existence, or its "world view." We generally have some notions concerning our institutions, but it is often a difficult task to state on paper with any precision and clarity just what the institutional philosophy is.

THE PLANNING APPROACH



The second step is to establish educational objectives; what is the institution going to do? Will it prepare professional engineers, or musicians, or ministers, or physicians? Will it offer sub-professional vocational training, or will it attempt to develop the "whole man"?

The third step is to design programs to accomplish the objectives. Programs to prepare lawyers will differ in many respects from programs to prepare computer operators and programmers. The "whole man" objective will require a wide variety of educational experiences, but probably none of them to the level of specialization found in graduate programs in the sciences.

The fourth step is to assign resources to the programs. Resources include personnel, facilities, funds, and time. We often overlook time as a resource, but if you plan a new graduate program in political science, you had better ask your librarian how much time he needs to be ready for it.

In most cases, the first time we go through this planning sequence, we will find that the resources required will exceed the known available resources. When this happens, it is necessary to rework some of the plans to bring the resources required and the resources available into better balance. This process is represented by the review loop at the top of the model.

Once we have developed a set of programs to achieve the objectives of the institution within available resources, we then conduct the program, and produce a product known as educated alumni. We can take a number of readings during the process of conducting the program and learn something about the institution. We can also take certain kinds of measures of the alumni; how many go to graduate school, how many mentioned in Who's Who, what is the quality of their service as ministers of judges, etc. These measures taken during the program and after the student has completed it can be fed back into the planning cycle at the appropriate places to cause changes in the program design, in the philosophy of the institution. This process is represented by the lower review loop in the diagram.

The field of Institutional Research, of course, contributes to a number of points in this process. The researcher can help to assess the needs of the area or clientele served in determining the educational objectives of the institution. As programs are designed and resources allocated to them, the IR office can be of help. We can make many analyses of the programs in progress to determine costs of various courses, the level of utilization of space, the grading patterns of various schools or departments or professors, and the kinds of student most apt to succeed in each type of program. At just about any point where there is some kind of analysis or decision to be made, the IR office has a potential contribution.

One additional comment about this planning diagram is in order before we go on to the process of modeling and simulation. Since most institutions are already in existence and already have some pretty clear ideas about educational objectives and programs, not to mention commitment to personnel and facilities, this approach to planning may appear to be a somewhat pointless exercise. In some cases this may be true. However, it does provide a model for a periodic review of all the institution does and attempts to do. To sit down with a planning council and attempt to state explicitly what educational objectives the institution is planning to achieve can be an enlightening experience, and at times, a little frustrating!

It is also not absolutely necessary to start at the beginning; that is, with a well worked-out statement of philosophy, and feel that it must be done perfectly before moving on to the next step. It may be that it is easier for a group to get started on the figures of resource allocation and supply. As they find it necessary to decide between two or more programs as to which will be emphasized or undernourished, it is almost guaranteed that they will eventually begin discussing objectives and philosophy.

Much more could be said, of course, about who is responsible for organizing and conducting the planning activities, about what data should be collected and processed, and by whom, and about how much involvement of the various levels of personnel and faculty within an institution, but those are other topics. The planning approach has been covered only lightly as an introduction to a discussion of the process of modeling and simulation.

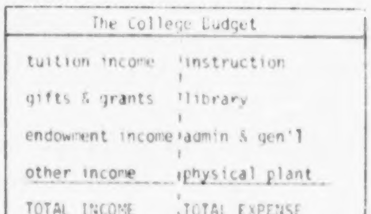
Throughout the rest of this presentation, we are concerned with the review loop shown at the top of the diagram.

Modeling

Let us first consider the concept of a model. By definition, a model is a representation of an object or system which is designed to look like, or act like, the real thing. There are many kinds of models around us every day, of course:

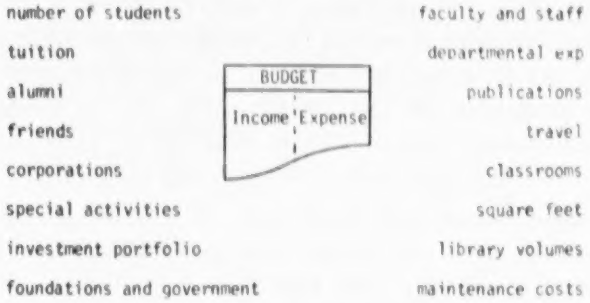
Physical models such as-	model airplanes model cars models of buildings
Schematic models such as-	blueprints of buildings engineers' drawings of machines electronic circuits
Mathematical models such as-	algebraic formula questionnaires budgets

Probably the most common mathematical model in colleges and universities (with the possible exception of questionnaires) is the budget. The budget represents in dollar terms the quantification of the institution's plans for a definite period of time. The operating budget contains both income and expense items which, presumably, balance or show a slight operating surplus.


The College Budget
tuition income
instruction
gifts & grants
library
endowment income
admin & gen'l
other income
physical plant
TOTAL INCOME
TOTAL EXPENSE

If we start with the budget and, then, attach to both the income and expense sides other items which can be quantified, but not necessarily in dollar terms, we can construct a more comprehensive mathematical model of an institution. We can also learn or establish relationships among the various descriptive items we have chosen to include. For example, a certain number of students times tuition should yield total tuition income, or close to it.

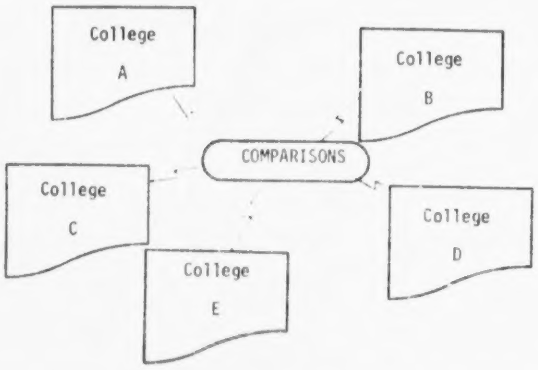
INSTITUTIONAL MODEL BASED ON BUDGET STRUCTURE:


number of students
tuition
alumni
friends
corporations
special activities
investment portfolio
foundations and government
BUDGET
Income
Expense
faculty and staff
departmental exp
publications
travel
classrooms
square feet
library volumes
maintenance costs

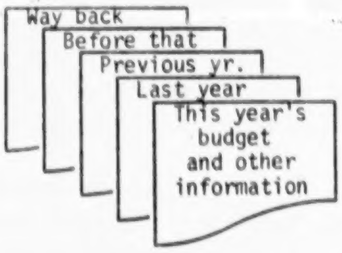
Using the budget as a basis for model design is only one alternative. Other modeling formats have been designed by George Weathersby of the University of California, by a project of the Association of American Colleges, by the WICHE:MIS project, and many other sources. The budget format is used here because of its universality.

Models have several useful purposes. For one, a model is helpful to analyze an institution. If we want to learn something about an institution, we can talk in terms of the number of students, professors, acres of ground, size of endowment, salaries paid, degrees offered, number of degrees produced by each program, and on down the line.

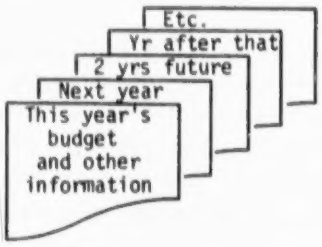
Models can also be used for making comparisons among institutions. This is what is done when we fill out our annual mountain of questionnaires. Somebody or some agency will use the data to make comparisons. The accrediting agencies analyze one institution at a time, but they are also comparing the institution being examined with certain kinds of normative data. This also happens when foundations or funding agencies receive requests for funds.


College A
College B
COMPARISONS
College C
College D
College E

A third use of models is to review the institution's past "behavior." This is similar to the process of making comparisons except that the different instituions are really the same one at different times. By this process we can determine if the student-faculty ratio is "improving," whether that means up or down depends on each institution and its goals. We can tell if we are making efficient use of our space, or improving the endowment yield.


Way back
Before that
Previous yr.
Last year
This year's budget and other information

And by simply flopping that illustration over, we can use models to simulate the future behavior of an institution. By analyzing the past behavior of certain items or relationships in our model, we can project into the future an extension of the same trends, or can make certain assumptions about changes which might be brought about by our decisions. This brings us to the concept of simulation.


Etc.
Yr after that
2 yrs future
Next year
This year's budget and other information

Simulation

For the purposes of our discussion, simulation is defined as the representation of an organization's functions, based upon a mathematical model. Simulation depends upon experience and observation, and the assignment of quantitative values and relationships to the elements which make up the organization.

Planning in higher education is frequently cast in a framework of ten years, although there is no particular reason to feel locked into this mold. However, for our present purposes, we will continue to use the decade as our basic time frame.

THE PLANNING FRAMEWORK OR MATRIX:

Planning item	current	1970-71	1971-72	1972-73	...	1979-80
Students					...	
Faculty					...	
Income					...	
Expense					...	
Classrooms					...	
Books					...	
Etc.					...	
Etc.					...	

The first step, then, is to identify those items of description which will be used in our simulation. For the purposes of demonstrating the planning system, we have created a new institution known as "Mini Model College" which is described in nineteen lines.

MINI MODEL COLLEGE

no.	name
1	Students
2	Student-faculty ratio
3	Faculty
4	Tuition per year
5	Average faculty salary
6	Fringe benefits as % of salary
7	Average faculty compensation
8	Total faculty compensation
9	Departmental expense
10	Total instructional expense
11	Administrative & general exp.
12	Library
13	Plant operations & maint.
14	Total educational & gen'l exp.
15	Tuition income
16	Gifts & grants income
17	Endowment income
18	Total educ. & gen'l. income
19	Operating loss - annual

Actual use of this planning system has resulted in models ranging from a low of about forty lines to a high of over 200. The only theoretical limit is the complexity one wishes to build into his model.

The next step is to assign the current value to each of the various items of description which will be included in the model.

MINI MODEL COLLEGE

no.	name	current
1	Students	750
2	Student-faculty ratio	10
3	Faculty	75
4	Tuition per year	$1000
5	Average faculty salary	$10,000
6	Fringe benefits as % of salary	10
7	Average faculty compensation	$11,000
8	Total faculty compensation	$825,000
9	Departmental expense	$165,000
10	Total instructional expense	$990,000
11	Administrative & general exp.	$190,000
12	Library	$70,000
13	Plant operations & maint.	$145,000
14	Total educational & gen'l exp.	$1,395,000
15	Tuition income	$750,000
16	Gifts & grants income	$175,000
17	Endowment income	$90,000
18	Total educ. & gen'l. income	$1,015,000
19	Operating loss - annual	$380,000

We frequently overlook the great amount of information we are gathering on our institutions each year and then shipping off campus to the state or federal agencies or other external organizations. Then when we start talking about gathering some information for planning purposes, the complaint can be heard clear from here to the coffee shop. We tend to forget that information gathered for one purpose can be used for other purposes as well.

The next step in preparing for simulation is to provide for instructions telling how each line is to be projected. In some cases, this will be a simple horizontal projection, such as salaries increasing at a given percentage each year. In other cases, this will be governed by relationships among lines. In the case of Mini Model College, Tuition Income, line 15, is calculated by multiplying the Students, Line 1, times Tuition rate, line 4.

MINI MODEL COLLEGE

no.	name	current	instruction for projection
1	Students	750	change to 1,000 in ten years
2	Student-faculty ratio	10	no change
3	Faculty	75	students ÷ stu-fac ratio
4	Tuition per year	$1000	add $50 each year
5	Average faculty salary	$10,000	increase 6% per year
6	Fringe benefits as % of salary	10	no change
7	Average faculty compensation	$11,000	salary + fringe benefits
8	Total faculty compensation	$825,000	faculty x average fac compensation
9	Departmental expense	$165,000	increase 4% per year
10	Total instructional expense	$990,000	dept. exp. + total fac. compensation
11	Administrative & general exp.	$190,000	increase 6% per year
12	Library	$70,000	5% of Educ & Gen'l expenses
13	Plant operations & maint.	$145,000	increase 6% per year
14	Total educational & gen'l exp.	$1,395,000	line 10 + line 11 + line 12 + line 13
15	Tuition income	$750,000	students x tuition
16	Gifts & grants income	$175,000	calculate to balance budget after current
17	Endowment income	$90,000	increase 6% per year
18	Total educ. & gen'l. income	$1,015,000	equal expense after current year
19	Operating loss - annual	$380,000	no loss after current yr, G & G balances

You will notice that in the case of Mini Model College, although there is an operating loss of $380,000 in the current year, in the future the budget will be balanced by raising sufficient gift funds to make it balance. The question to be considered, then, is how much money will be necessary to make it balance?

Once we have gone through the steps of identifying the items to be included in the model, establishing the base or current levels of each item, and providing instructions for the projection of the model, we are ready for simulating the future behavior of the institution based on the assemptions or decisions that we have made. This can be done by hand, and I would encourage everyone to do it that way – at least once.

There is, however, a computer program now available for just this process, and that will be the subject of the rest of this paper.

The Help System

The HELP (for Higher Education Long-range Planning) system was developed by the Midwest Research Institute of Kansas City under contract with the Kansas City Regional Council for Higher Education, and funded through the Title III program.

The HELP system was designed to make the technology of computers and simulation available to the non-computer-type person. It is now in use by over a dozen institutions in six states. Its use by college presidents, deans, development and business officers, as well as institutional research officers is convincing evidence that this objective has been met.

Once the planner has developed a set of instructions for projections as indicated in the illustration for Mini Model College, he has all the information he needs to assemble a model with the HELP system.

There are two kinds of instructions which can be given to use the HELP system: Instructions for independent variables, and instructions for dependent variables. Let's consider the independent variables first.

In every case, the user identifies a line by number and name, and usually a base or current value. Actually, the base value is necessary in only one type of computation, but it is a good idea to include it if the information is available.

The most direct method of creating a line is to insert data for each of the ten years. This is useful if the data are known, as in the amortization of a loan, or when there will not be data for one or more periods.

```
no.  name  base  instruction
____ ____ ____  __ __ __ __ __ __ __ __ __ __
____ ____ ____  increase ___% per year
____ ____ ____  add ___ each year
____ ____ ____  change to ___ in ___ years
```

(horizontal calculations)

Independent variables

The second method of creating an independent variable is to provide the base level, then determine that it is to be increased by a given percentage each year. This is often used with such items as faculty salaries, cost of maintenance per square foot, or the cost per library volume.

A third means of handling an independent variable is to add an increment each year. For example, room and board may be expected to increase by $50.00 each year.

In both the percentage and the incremental changes, a negative sign may be used to indicate a decrease.

A fourth form of independent variable is the change to a goal level. The goal can be achieved in the tenth year, or can be reached at an earlier point, then held at the goal level for the remainder of the decade. If the goal of sixteen students per faculty member is reached in, say, six years, then it will be held at that level for the remainder of the ten years.

These, then, are the means by which a line can be created and calculated without reference to any other line.

The dependent variable instructions permit the interrelationship of two or more lines in various ways. The most simple is the addition of several lines into a total. For example, Freshmen, Sophomores, Juniors, and Seniors may be added into Total Enrollment. This is also useful in constructing the budget. It can be used to build sub-totals, then those added into a grand total.

```
no.  name  base  instruction
____ ____ ____  summed from other lines
                              ⋮              ⋮              ⋮
____ ____ ____  ______ ____   ______ ____   ______ ____   ______ ____
                factor line   factor line   factor line   factor line
____ ____ ____  ______ ____ "diagonalization"
                factor line
____ ____ ____  accumulate ____
                           line
```

(line interrelationships)

Dependent variables

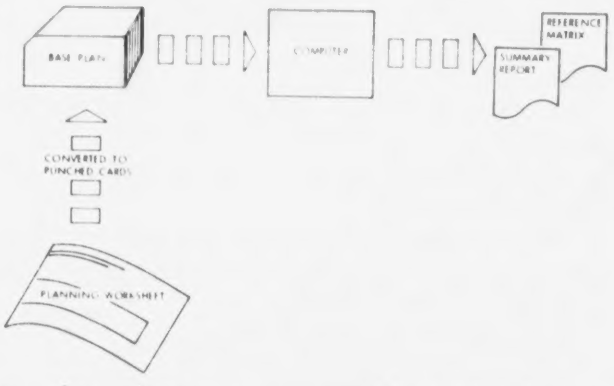
Another means of interrelating the lines is the part which gives the system its greatest versatility and power. This lets the user write a formula involving up to four lines or factors of lines in virtually any combination of addition, subtraction, multiplication or division. In the case of Mini Model College, the number of faculty was determined by dividing the number of students by a student-faculty ratio. Total faculty compensation, line 8, is a product of the number of faculty, line 3, times the average faculty compensation, line 7. Total gift income which balances the budget, is calculated by subtracting tuition and endowment income from the total income.

There is also the capacity to select, automatically, the minimum or the maximum of up to four lines. This might be used, for example, to tell you when your increasing enrollment indicates additional dormitory beds will be needed.

There are too many limitations of time and space to try to list all the ramifications of this method of writing a formula. However, its use is virtually limited only by the imagination of the user.

So far, we have discussed independent variables, or horizontal calcuations, and dependent variables which calculate vertically within a column. There is also a way to shift data from one column of one line to the next column of another line, indicated as "diagonalization." For example, sophomores of one year may be calculated as a factor of the freshmen of the previous year. The model can be constructed to start with the input of freshmen, and will follow them through the four year period based on known or assumed rates of retention. This method can also be used to tell us how many freshmen will be needed from year to year in order to meet certain enrollment goals, considering various rates of retention.

Finally, the values of one line can be accumulated for the ten years in another line. For example, we can accumulate the amount of gift money needed over the ten year period. Or if we calculate annual operating surplus/loss, we can see the net effect of short periods of loss or surplus. In this way, we may program short periods of loss if we know there will be a surplus soon enough to cover it. Or we may accumulate a few years of surplus to prepare for the introduction of a new program.



After the planner has assembled his data and instructions, the data are entered onto punched cards and assembled into the basic deck. This is then submitted to the computer and results in a reference matrix which contains all the details submitted, as well as a set of reports containing just those items requrested in whatever format is needed. For example, summary reports may be assembled for student data, faculty data, income budget, expense budget, physical plant analysis, or whatever is needed. A copy of the single page summary report for Mini Model College follows.

DEMONSTRATOR SUMMARY REPORT

MINI MODEL COLLEGE **DEMONSTRATOR – A** **FEB. 14, 1970**

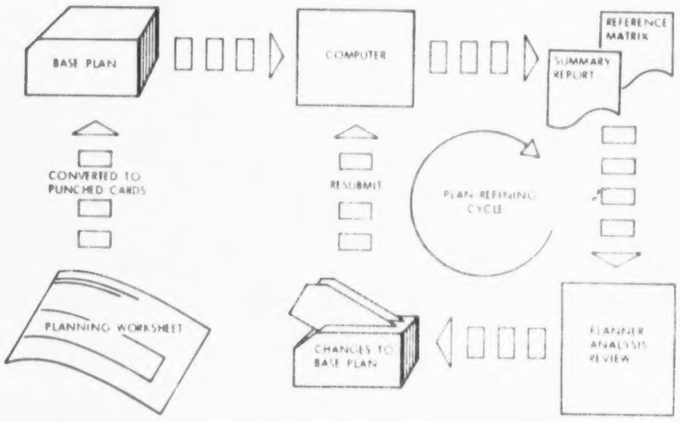
PLANNING ITEM	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
1 STUDENTS	750.0	775.0	800.0	825.0	850.0	875.0	900.0	925.0	950.0	975.0	1000.0
4 TUITION PER YEAR	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500
3 FACULTY	75.0	77.5	80.0	82.5	85.0	87.5	90.0	92.5	95.0	97.5	100.0
5 AVG FACULTY SALARY	10000	10599	11235	11910	12624	13382	14185	15036	15938	16894	17908
6 FRINGE BENEFITS AS PCT SAL.	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
7 AVG FACULTY COMPENSATION	11000	11659	12359	13101	13887	14720	15603	16539	17532	18584	19699
9 DEPARTMENTAL EXPENSE	165000	171599	178463	185602	193026	200747	208777	217128	225813	234846	244240
2 STUDENT-FACULTY RATIO	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	BUDGET										
15 TUITION INCOME	750000	813750	880000	848750	1020000	1093750	1170000	1248750	1330000	1413750	1500000
16 GIFTS AND GRANTS INCOME	175000	596481	643758	697153	757295	824857	900560	985174	1079526	1184500	1301041
17 ENDOWMENT INCOME	90000	95399	101123	107191	113622	120440	127666	135326	143446	152053	161176
18 TOTAL EDUC-GEN INCOME	1015000	1505631	1624882	1753094	1890918	2039047	2198226	2369251	2552972	2750303	2962217
20 CUMULATIVE GIFTS AND GRANTS	175000	771481	1415239	2112392	2869688	3694545	4595105	5580280	6659806	7844307	9145348
	ALTERNATE MODEL										
11 ADMINISTRATIVE + GENERAL EXP	190000	201399	213483	226293	239870	254262	269518	285689	302831	321001	340261
10 TOTAL INSTRUCTIONAL EXPENSE	990000	1075249	1167231	1266449	1373442	1488789	1613111	1747072	1891385	2046812	2214172
13 PLANT OPERATION – MAINT.	145000	153699	162921	172697	183059	194042	205685	218026	231107	244974	259672
14 TOTAL EDUCATIONAL – GEN. EXP	1395000	1505631	1624882	1753094	1890918	2039047	2198226	2369251	2552972	2750303	2962217
19 OPERATING LOSS – ANNUAL	380000.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23 GIFTS – GRANTS AT 20 PCT YR	175000	192499	211749	232924	256217	281839	310023	341025	375128	412640	453904
24 BREAKEVEN TUITION RATE	1506	1571	1640	1712	1789	1870	1956	2046	2141	2241	2347

Notice that the amount of gift money needed in the next decade, line 20, will exceed nine million dollars.

The alternate model at the bottom of the report assumes that gifts and grants may be increased at about ten percent each year, and calculates what tuition will be needed per student to balance the budget. The formula for this figure was line 18 less lines 17 and 23, the result divided by line 1.

Once the planner has the opportunity to review the reports, he may try some different assumptions. The buzz word for this process is to ask "what if" questions. What would happen if the student-faculty ratio were raised to sixteen? What would happen if the enrollment went to 1,200 instead of going up to just 1,000? What are the effects of both these changes.

PLAN REFINING CYCLE



In the original program developed for the regional council, the planner simply substituted a new data instruction card for the original, and resubmitted the deck to the computer. This process, of course, could be carried on indefinitely.

The research institute has made some improvements in the program, one of which allows the user to set up a number of alternatives, and go through several refining cycles in one submission to the computer.

Summary

The HELP system provides the planning office a very versatile tool for constructing and exercising simulation models of his institution or segments of an institution. It provides an economical means for testing out the effects of various proposed changes in decisions without having to live through the experience of a decision. It provides a valuable communicative tool for use within the organization. It also imposes a kind of discipline which forces college officers to take a new kind of look at an institution so they will learn that decisions are not made in isolation, but will probably affect other parts of the organization.

But a word of caution must be offered. The use of the system is only as good as the data and relationships which go into the model. While we can't expect to be working with information that is 100 percent accurate all the time, we must realize that the results are limited by the data available, and, even more critical, by the instructions and the relationships we have put into the model. This will cause us to grow a bit as we learn to analyze our institutions for the relationships that exist. As a result, we may all become increasingly more effective administrators.

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INTEGRATED UNIVERSITY MANAGEMENT INFORMATION SYSTEMS

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The growth of institutional research in the past decade demonstrates the viability of the systems approach to management as applied to universities. The conceptual simplicity, consistency and beauty of the systems point of view has won the enthusiastic support of many academic administrators. This growth of institutional research, both on university campuses and in other agencies related to higher education, is being stimulated by the increased societal demands for university services accompanied by a taxpayers reluctance to support universities at the level universities deem necessary to meet these demands. Consequently, it is widely recognized that tools of a more sophisticated and powerful nature are needed to resolve the tough problems of resource allocation within the university. Institutional researchers on each campus and as a profession must accept a major share of the challenge for meeting this need. In fact, given the analytical nature of our work, our theoretical and practical understanding of all university facets, and our fortunate position within the university organizational structure, we must accept considerable leadership in the development and implementation of the best management tools and techniques at all levels in the university.

The impelling reason for the establishment of offices of institutional research on most campuses was the acknowledged lack of information required for management decision making and policy formulation in all sections and at all levels within the university. Data that were available were often incomplete, out-of-date, or in a format which greatly reduced their usefulness, not only for operational and control purposes but certainly for decision making and planning. On most campuses the situation has continuously improved. However, the need for data and information has been growing exponentially while supply has not kept pace. Institutional research has supplied information, new tools, techniques and case studies that have been useful, but society, through its agencies and governing bodies, is demanding more evidence that funds allocated to institutions are being used well. Within the universities, converts to the systems' sect, grasping the potential latent in these approaches and faced with difficult problems in the complex political environment in which academic administrators must function, demand a level of informational support beyond present day capacity. Conceptual solutions which seem compellingly logical extensions of present methods have, unfortunately, proved deceptively difficult to realize. Planning - programming - budgeting systems and computer simulation models supported by a totally integrated university data base should, theoretically, be the sort of tools required to provide the university with the fundamental arsenal needed to successfully wage its internal and external struggles. With the advantages of third generation computer hardware considerable technical progress has been made. However, whether these systems are economically feasible is at best in doubt, and whether politically they can be implemented remains a question.

Before we consider some technical aspects of university management information systems and the question of their implementation as university management tools, let us consider the nature of the management information needs of universities. For this purpose it is convenient to consider university management as consisting of six functions. These are planning, improving program efficiency, resource allocating, management decision making, operating and controlling. The execution of each of these functions requires a level and type of informational support which partially specifies the university management information system.

Policy and Program Planning

Planning is the management function of relating means to ends. Thus, in order to strictly conform with this definition a university's output must be measured and compared with its goals and objectives. The statement of goals and objectives is called the university's policy plan. Next, a means, or a program plan, must be determined which will minimize differences between the policy plan and the actual output. In order to support this planning procedure, the following is required. The outputs must be measured in units which permit comparison with the quantified targets specified by the policy plan. The successful execution of the program plan implies detailed knowledge of the state of the university at any point in time and the relationship between the state and the output. This knowledge is necessary to determine how university resources should be allocated to achieve the internal state of the university which will result in the desired output.

The present state of the art of university planning must be considered to determine what demands will be made on a university management information system to support those aspects of the planning process described above which are currently practical. Following centuries of discussion and evolution, no university has developed a policy plan which totally specifies goals and objectives in quantified terms. Similarly, there is no agreement on all university outputs. There is general agreement that the traditional objectives of universities are to provide instruction, research and public service. However, no units of measure exist to provide the feedback information necessary to compare output with desired output. Much research in many fields will be required to improve definitions and tools now available to measure university output. This is an entirely legitimate field of endeavour for institutional research and one of immense social and economic import.

Since it can be shown at least intuitively that certain measurable characteristics are proxy variables indicative of university output some output measurement is possible. These indicators include the number of degrees awarded, the number of papers published in scholarly journals, the number of man-hours served by professors on civic committees or in consultation. The notion of economic value added by the university experience has also been used as an indicator of university output or benefit.[1]

Despite poorly defined goals and outputs of the **total** institution, university planning goes on and requires massive informational support. The academic planning of new and existing programs leading to the development of a total university academic plan, sets out the parameters for all other aspects of university planning. Although ideally departmental academic plans and programs should follow from university objectives, usually the two major system wide informational inputs are student enrollment projections and estimates of total operating and capital funds. Based on these, departments plan the resources required to achieve their academic program. These include the number, type and level of classes which, along with the level, classification and number of students, gives the weekly student hour loading which yields the requirements for faculty members. With this information and information on research and other programs, calculations of support staff, equipment and supply needs are made. The detailed resources required by each department or academic program induces resource requirements on the other departments and for learning services such as provided by the library, computer center, communications media center, and so on. The total resource requirements of the academic sector of the university reflect needs for space and facilties which form the basis of the capital development plan. These data indicate demands for administrative services, maintenance, and site development, all of which must be translated into specific items such as people, equipment and services and finally into dollars required in a given period. The informational need occurs at the departmental, faculty and university levels. Since planning is a continuous and iterative process, the information system must be capable of supplying information from a data base which is continuously maintained.

The academic plan of each department influences the resource requirements and plans of other departments and sectors of the university. The total university resource requirement is the sum of the requirements of the sectors. Therefore, an informational system which permits planners at all levels to cut and try proposed plans to determine their suitability is the most desirable. Thus, the university management information system which meets this requirement is one which includes a simulation model supported by an integrated data base of current values of virtually all the non-derivable and measurable parameters which describe university operations. Such a university management information system would also have the flexibility required to determine, to the extent currently feasible, university outputs for comparison with goals.

Program Efficiency

Academic program efficiency is a concern of university management, and, therefore, must be examined to determine the associated need for management information. However, since there is no accepted set of measurable inputs or outputs for educational programs, notions of efficiency are vague. This is another important area of university management requiring considerable research. Present knowledge of the learning process is such that quantitative analysis of program efficiency and how that efficiency can be improved cannot yield entirely satisfactory results. Intuitively, improving the student-professor ratio, judicial use of computer assisted learning programs and other fruits of recent educational technology offer promise of improvement in many academic program. However, resources spent on these items cannot be used for alternative purposes and the sort of quantitative results necessary for a systematic choice of alternatives are not now available. Thus, general considerations of this management function are not likely to lead to insights of the requirements of a university management information system to support it. Nonetheless, each person responsible for academic programs is interested in experimenting with variations which might improve his program. Therefore, discussions between these users and the system designers might lead to special design specifications to meet their need. In general, it seems evident that the system found ideal for planning would have the capabilities of providing information helpful in experimenting with ways of improving program efficiency.

There is a danger that program cost information supplied to administrators will be misinterpreted as an indicator of program efficiency. Costs per weekly student hour or relative costs per weekly student hour are, for example, sometimes used as important variables in budget discussions. Since these data have no quality or benefit component they cannot be used to imply efficiency. In general, it should be remembered that better decisions depend on better analysis not only on more data.

Some work has been done on determining program efficiency. The Economic Council of Canada study[2] of 1965 related value added to educational costs and calculated a national return on investment in education which is a measure of efficiency of sorts. Other comparative studies of this type between similar programs in different universities and among different programs in the same university have been done but must be considered entirely experimental given the present methods of gathering and projecting the required data.[3]

Resource Allocation

Since planning can be thought of as future resource allocation the informational needs required to support the annual budgeting process are similar to those required for planning. However, annual budgeting requires, beyond planning data, information relating budget to actual expenditures. The annual budgeting procedures in an institution in which a PPBS has been implemented may require considerable information necessary to build a "crosswalk" to the normal budget format. This information would normally be available since it would be required for financial control and operation although much work would be required to actually build the crosswalk.

Management Decisions

Management decisions are made in the execution of the management function at all levels. The aspect of decision making which places the greatest demand on the information system is the need to examine alternatives. Since the manager himself is often in the best position to suggest alternatives, the ideal management information system is the one that can adequately answer the "what-if" question. In a complicated organization such as a university this answer can only be provided timely and in sufficient detail by a system which includes a simulation model.

Operations

Information required for operations consists of the data required in the day-to-day running of most of the university's academic and administrative offices. Besides data, it includes information on procedures needed in routine clerical functions associated with payroll, accounts payable and receivable, student records, personnel records, class enrollments and schedules, space inventory and so on. Data in this category are for the most part gathered and used by the operating department concerned. There is a tendency on the part of the operating department to view information generated or collected within the department as a private data bank for use only by the department. There are several reasons for this. The originating department critically needs this information to perform its function and is normally responsible for the confidentiality of information gathered and for its possible misinterpretation or misuse. Sometimes the department's desire to maintain power or status as the sole possessor of certain information is a factor. From the point of view of the usefulness of operating data for other levels of management and thus for an UMIS there are several important considerations. 1) Operating departments maintain data solely for operating purposes and thus they will not normally be updated or formated suitably for other levels. 2) Definitions and standards of data elements will not necessarily be the same in all departments. 3) Institutional analysis data may not always be a subset of operations data. 4) Operations data may be handled in different media than needed by other levels. Each institution will represent a special case, but, in general, simply because data is used for operations does not imply its availability for other management purposes. The difference between the points of view of managers of operating departments and MIS designers is an important variable in the implementation problem.

Control

Generally, data and information required for the management function control is less the preserve of one department. It is both basic information and a combination of basic information and operational information. Since it is operations dependent it has the weakness of operations data from the MIS viewpoint. The nonoperations component of control information is that relating to management policy. The budget of each department, for example, contains necessary but not sufficient information for the control of expenditures. Information on both the budget and previous expenditures are required for control. Control information is necessary for all management functions.

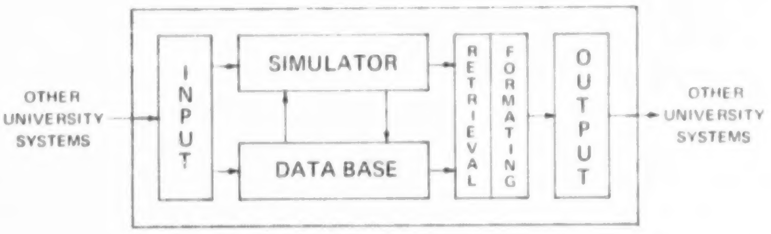
In summary, examination of the six management functions considered above show that informational needs of universities can be considered as falling into two categories. The first is basic information which comprise an integrated set of mutually compatible data elements describing university operations. The second is information derived from the basic set according to some formula. Ideally the formula is programmed on a computer as a simulated model of the university. Consideration of this duality of classification is more helpful than focusing on the specific information needs of each of the six management functions and leads to a very simple model of UMIS of all types.

Model For A University Management Information System

The range of possible univeristy management information systems is a broad spectrum extending from a one man OIR supported by a sharp pencil and the back of an envelope to a multi-million dollar operation staffed by management and information specialists and supported by the best computer hardware programmed to simulate university operations and drawing on a well cultivated integrated data base. However, regardless of the sophistication of the information system it is possible to schematically represent it as shown by the model in Figure 1. The system is embedded in a total university environment to emphasize the importance of total system considerations on the design, implementation and functioning of an UMIS. The five subsystems show the essential functions of an UMIS.

Figure 1.

Management Information System Embedded in the Total University Environment



Input

Inputs to the input subsystem include those for transmittal to the data base or to the simulator and normal inquiries. This subsystem can include people, manual and automated systems and procedures, computer terminals, telephones and other communications systems. It is worth recalling that university management information systems have been called into existence because the need for management information at all levels has not been satisfied. The input subsystem is one of the major interfaces of the UMIS with the university and the focus of many of the difficulties hindering implementation. Because of the nature of the university management process the design of this subsystem is critical to successful implementation. Implementation difficulties are mainly people problems and their importance may have been overlooked by analysts attracted by the interesting technical aspects of the other subsystems.

The function of inputting to the data base includes data element definition, coding and maintenance. The function of inputting to the simulator includes normal maintenance or updating of the simulator as well as changes in simulator parameters for consideration of planning alternatives or answers to "what-if" questions including those involving organizational modifications.

Data Base

Ideally, the information filed in the data base subsystem of the UMIS is that required to support the various management functions at all levels in the university. For the purposes of the conceptual model of Figure 1 the information is thought of, in the first instance, as the appropriate values of the basic variables which can be used to describe the state of the system. The values of any parameters derivable from these basic variables are considered to be calculated as required by the interaction of the simulator with the basic data. Thus, institutional characteristics including procedures and policies are part of the simulator. For example, student enrollment, university timetable and space inventory would be stored in the data base while weekly student hours or classroom utilization would be derived by the simulator. Historical data of all types including that required for retrospective simulations would be filed in the data base.

Practical UMIS design at any particular institution need not follow this pattern. Present experience[4] has shown that since it is not possible to predict the information which will be requested from the UMIS, data base structure should be as flexible as possible to accommodate unforeseen demands. In point of fact some information is difficult to mechanize because of its nature, environmental factors, user's personal preference, cost, privacy and security. In practical situations, one must also consider such things as the available hardware, mode of system operation, cost and the nature of system support.

The model data base is totally integrated with each discrete data element having a unique definition and code. The following is a representative list of categories of these data elements. The sets of categories chosen have no special theoretical or practical merit except that they can be associated with operating (source) departments which are usually organizationally related. This is not to imply that the data elements so associated cannot be coded to permit other associations such as required if the data base is to support PPBS.

STUDENT INFORMATION

- Admission Records
- Personal Characteristics Data
- Academic Achievement
- Alumni File

FACULTY INFORMATION

General Personnel Data	
Assignment Record	Classes, Graduate Students Supervised, Committees, Administrative Duties
Academic Achievement	Papers Published, Honors, Memberships, Courses Developed, Teaching Ability, Students Counselled.
Service Record	Consultations, Professional/Public Committees, Student Nonacademic Involvement.

SUPPORT STAFF INFORMATION

- General Personnel Data
- Job Classification/Assignment Record
- Professional Achievement
- Service Record

ACADEMIC PROGRAM INFORMATION

Instruction	Classes (Number, Name, Description, Enrollment), Graduate Students.
Research	Department/Nondepartment Funds, Institutes.
Public Service	Extension, Noncredit, Cultural Activities, Special Studies.

FACILITIES INFORMATION

- Site, Building, Room, Special Facility, Equipment Inventories and Characteristics.
- Site, Building, Room, Speical Facility, Equipment Timetables.
- Site, Building, Room, Special Facility, Equipment Maintenance Schedules and Records.

FINANCIAL INFORMATION

- Current/Historical Operating/Capital Budgets
- Annual Financial Statements of Receipts/Expenses
- Current Accounts Payable/Receivable
- Investments
- Student Loans
- Research Funds

ACADEMIC SUPPORT SERVICES INFORMATION

- Library – Collection, Circulation, Retrieval Services
- Computer Center – Software Library, Utilization, Cost Data
- Communications Media – Software Library, Equipment Inventory/Utilization
- Student Services – Counselling, Loans, Health Records

ENVIRONMENTAL SUPPORT SERVICES INFORMATION

- Food Services
- Student Housing
- Workshops, Technical Services
- University Theatre
- Ancillary Enterprises

OTHER INFORMATION NOT PART OF SIMULATOR

- Historical Planning, Organizational, Control and Operations
- Information
- Non-university Data

Simulator

The simulator represents the data manipulation function necessary for the calculation of the values of the non-basic parameters or the projected values of those elements and the basic elements under some assumed change in the university. It has two important inputs. The input from the input subsystem sets the simulator; that is, it introduces the assumptions under which the required calaculations will be made. The input from the data base supplies the values of the basic data elements. The output to the data base is historical information or new values of basic data elements for retrieval, formating and outputting. The output to the retrieval and formating subsystem includes the values of the calculated parameters, the system parameters assumed for the run, and instructions to the R/T subsystem. For the conceptual purposes of the model, the simulator can assume any degree of complexity or sophistication.

Many advanced university simulation models have been developed over the past few years.[5] The Michigan State University model developed by Herman E. Koenig[6] and colleagues is particularly interesting because the state space notation used permits the complex relationships necessary in describing university operations to be expressed simply. The general form of the model is expressed by the following two vectors.

The freedom to analytically manipulate equations in this form is a major advantage of the state space notation. The equations can be programmed on a digital computer to provide a simulation model or used in this general mathematical form for analysis.

The CAMPUS models developed by Richard W. Jody and Jack B. Levine at the University of Toronto[7] are probably the most comprehensive and successful global simulation work done to date. These models simulate university operation after accepting a description of the university structure, programs and activities, policy decisions relating to resource allocation and yield resource allocation requirements. Evolved through five years of research and development current CAMPUS-type models[8] are highly integratable modular systems of subroutines. Because of this modular structure and the fundamental nature of inputs accepted CAMPUS-type models resemble building blocks which can be used to simulate any particular university. The flexibility and modularity of the system for generating CAMPUS-type models has many of the characteristics of a programming language. However, because of the generality of the models they must be implemented on very large computers and to take full advantage of the generality should be matched to a sophisticated data base.

The Weathersby[9] model recently adopted by the Management Information System Program of the Western Interstate Commission for Higher Education differs from most of the other available models in its extensive use of statistical methods to determine internal relationships. A statistical package has also been developed for estimating reasonable values for exogenous variables such as student enrollment.

Although they hold significant promise, no global simulation models have been used in universities except experimentally. Their development, however, has stimulated well directed research in the area of management of higher education which is increasing our understanding of the university management process.

Retrieval/Formating

This subsystem serves the dual purposes of retrieving data elements from both the data base and simulator subsystems, then, formating the data elements into a suitable report for transmission to the output subsystem. Normally the design of the R/F subsystem will depend upon the design of the other subsystems to ensure an integrated system.

Various types of generalized software[10] packages are available which will perform a retrieval and formating function from any definable data base. Some of these packages have the capability of manipulating data bases as well as retrieving and formating. It is thus possible to think of a UMIS as consisting of the data bases normally available in the university plus a file management system package. The resultant data management system fits into the context of the model of Figure 1 and may represent for some institutions a practical first step in the development of an UMIS. Such a first step has the distinct advantage of producing tangible results quickly which might be an important factor in convincing the university that funds should be allocated for further development of an UMIS.

Output

The output from the R/F function is transmitted to the other university systems by the output subsystem. Technically, this subsystem is less interesting than the input subsystem since mechanically it consists of a computer terminal, a telephone, the campus mail, a person to person conversation or some combination of these. However, together with the input subsystem the output subsystem forms the interface of the MIS with the university and thus are critical factors in implementation problems. People will only use the system if they have faith in it. Thus the subsystems with which the user interacts must be designed to give him maximum confidence in the total system. Most academic administrators and other users are not systems analysts and do not speak the "language." The output subsystem must therefore be a translator which gives the user the answer to his questions precisely as he wants it. Initially each administrator or professor using the system will compare the system's results with his own intuitive feeling based on his experience. Each time the system passes the test his confidence is reinforced. Until the system is fully implemented and regularly used by all levels of management in the normal execution of their duties, the output subsystem must be a salesman.

Problems Of Implementation

Much research and development work has been done on UMIS and related systems in business, and yet no global systems are being used as management tools either in universities or industry. In fact, there is much evidence to suggest their implementation may not be practical.[11] Thus the actual situation is less than salutary and demands considerable reflection on the part of those who see these systems as a logical extension of present management science techniques and those who have the professional responsibility to provide management information support. It does not follow that because no global systems are now operative none ever will be. However, if it can be shown that such systems are not practical then institutional researchers must accept the dead end nature of future efforts in this direction and search for another path.

No proof for the impracticality of a proposed system exists. It is possible however to examine those factors which contribute to the difficulty of implementation and gain some insight into the nature of the problems. Elementary systems and systems useful for the operations and control functions of management have been implemented; whereas, global systems required for the higher levels of management have not. The question is whether the continuous range of theoretical systems can be divided into sectors of practical and impractical systems.

In any endeavour, success is less likely as one presses towards the limits of technical, economic and political feasibility. Specifically, UMIS implementation depends on the following factors:

1. MANAGEMENT ORIENTATION OF THE SYSTEM: The difficulty of implementation of an information system increases as emphasis is placed on it as a management tool. To be a useful tool it must be understood and appreciated by the user which implies that system design specifications must be set by the user. As information systems are intellectual tools, fruitful interaction can only occur if there is an intellectual compatability between the user and the system. Such compatability must be built into the system by the intimate involvement of the user in system architecture. University management is difficult to define let alone involve in system design. University administrators are traditionally stewards[12] executing policies determined through a complicated political process within the university. Policy formulation is often the responsibility of committees. Thus, management responsibility at this level is spread among many groups. Since it is difficult to involve all the members of these groups in system design, it is evident the traditional management process in universities inherently hinders UMIS implementation.

   The normal university wide management functions of planning and program evaluation are to a large extent stymied by the lack of definable and measurable university goals, inputs and outputs. The difficulties are again more related to the nature of universities than to information systems. Finally, there is a fear that the successful implementation of a UMIS would upset the traditional policy formulation methods in universities, would result in organizational changes to the disadvantage of people currently in powerful positions and would create a pool of management information which would be misused. This is not peculiar to universities but is complicated by the diffuse and poorly defined nature of university management. The natural consequence of this fear is a reluctance on the part of many university professors, administrators and students to enthusiastically participate in any program which might promote the implementation of an UMIS.

2. COMPLEXITY: Technical problems of implementation intensify as system complexity increases towards that required for a global system. Conversion to a new system within a dynamic institution where requirements and procedures are continuously evolving, is difficult since operations must continue through the conversion period. The increased complexity of the simulator increases the required capabilities of computer hardware. Data base specifications become more difficult to meet as the number of data elements increase. The input and output subsystems are more difficult to realize as more accurate data is required, as the need for more precisely measured data increases, as the compatibility of data element definitions becomes more critical and as the update of data elements must be done simultaneously to ensure that data manipulation will yield unambiguous results.

3. ECONOMICS: Economic arguments in favour of information systems become less convincing as the system becomes more oriented to the higher levels of management functions. Cost-benefit analysis can show the superiority of certain automated information systems for operations and control functions but it is very difficult to place a dollar value on

information needed to support timely decision making and good planning.

Thus, a relation exists between the position of an information system on the UMIS spectrum and the difficulties associated with its implementation and these difficulties increase as the UMIS becomes more global. The questionof whether the spectrum can be divided into two ranges of practical and impractical systems remains unanswered. However, two practical conclusions are possible. No university should undertake to develop a UMIS until it is possible to show that all the problems of implementation have been examined and found solvable for the proposed system at this time in this particular institution. Implementation is for UMIS the major explicit determinate of system specifications. Secondly, much more research into the problems of implementation is needed to answer the "two-ranges" question. The university management process has been evolving rapidly during the last decade and must be better understood before all the elements of implementation problems can be isolated. These questions should now be given priority over the technical aspects of UMIS design.

The Prospects

One of the most remarkable characteristics of the management tools that have resulted from the application of systems science is that their total value is not in their practical implementation as management tools. The research on UMIS has centered the attention of many scholars of higher education on some pertinent problems and has at the same time provided a framework for their further study. The sociological, psychological and historical aspects of the problems of IUMIS implementation are a good example. Resource allocations within the university are of significant importance to all of society because of the proportion of the public treasury spent on higher education and the number of citizens benefiting from some form of university services. The social problems of students within the university are socially related and, thus, the better universities are understood the better chance there is of spin-off results applicable to the larger society. Therefore, research into the problems of UMIS implementation is research into the fundamental nature of the university management process and as such has broad implications which also justify its pursuance.

The flexibility of these tools must not be overlooked in the search for solutions to their own implementation. An MIS can be used in at least two ways. The first is the straightforward use of the system to provide management data. The user asks the questions, the system provides an answer. The second service that these systems can provide is that similar to a skillful assistant or associate. The human user has remarkable capabilities of perception and judgment while university management information systems have equally remarkable capabilities of memory and calculation. Used in this latter mode, even a very simplified UMIS can convince those involved in various aspects of university management, even committees,[13] that the benefits obtainable from such systems outweigh any real or imagined difficulties their implementation can cause. Future efforts at implementation must therefore recognize the nature of university management and provide a MIS to do the required job.

Despite the impressive array of technical, economic and political problems facing the future implementation of increasingly more complete IUMIS, the logic from which these systems spring remains compelling. The approach which has led to the successful implementation of simpler systems and the design of larger systems must now be used to seek the solutions to the many problems inhibiting the implementation of integrated university management information systems.

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MIS DEVELOPMENT: IMPLICATIONS FOR INSTITUTIONAL RESEARCHERS

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It is always helpful to look at the past when one prepares to forecast future events. Offices of institutional research were established during the past decade to provide the kinds of information which shed light on many aspects of college and university operations and to be of assistance to those in decision making roles. Historically, institutional research offices have existed for three major purposes: 1) To comply with standard, recurring information requests from external state and national agencies as well as to provide a standard array of data for those within the institution, 2) to fill special information requests from the president and faculty within the institutions, and 3) to furnish information which will be helpful in long-range planning.

If offices of institutional research and the personnel therein are to successfully fulfill these purposes, they must possess a number of attributes. These include: 1) The ability to anticipate the major information needs and requests, i.e., the questions that are most likely to be asked; 2) the ability to work closely and establish good relations with registrars, business officers, and others who collect and control the data base which is so essential to institutional research operations; 3) the ability to collect special data and information that may be required for specific studies; 4) the maintenance of a high level of competency to process data to derive the needed information.

More than any other factor, the key to future success for institutional research offices will be their level of competency in processing data to derive more meaningful information than they have been able to make available in the past. Presidents have tended to ask for such information as they thought they could get from their institutional research offices. Thus, their requests were often keyed to the level of expertise that they perceived in the IR office. More often than not, presidents have asked for the kinds of information they thought they could get rather than the kinds of information they most wished to have.

Currently, there is a great deal of discussion regarding the development of management information systems within institutions of higher education. Administrators can be expected to perceive that the new kinds of information which may be made available as a result of implementation of management information systems are essential to their success as decision makers. Therefore, it is likely that the kinds of questions which are asked of institutional research offices will require the use of new management tools in preparing responses. In the past, we have looked primarily at inputs and resources consumed. In the future we will wish more and more often to associate outputs of education programs with resource inputs. Program related cost data will necessitate the use of program budgeting and program accounting procedures. Measures of the quality of the outputs of educational programs will be requested as well. Simulation models which will allow examination of consequences of alternative actions can be expected to become a part of the standard tools used during institutional management. Administrators will wish to engage in contingency analysis and examination of the benefits which are foregone as a result of the failure to select certain of the available alternative courses of action. It can be expected that decisions will be made in the face of less uncertainty and that there will be a demand for quantification of risks associated with alternative plans. The total approach to educational decision making can be expected to change in the next few years toward a more scientific and systematic procedure.

An important question is, will the institutional research offices be found wanting when the new kinds of information are considered a must and are demanded by college and university administrators? If the answer to that question is yes, if IR offices are not able to provide the new kinds of information, then it can be expected that new offices of analytical studies may well be established. These new offices may overshadow the institutional researchers who will be left with the routine chores of coping with the maintenance of standard sets of data, the development of institutional fact books, the completion of HEGIS and other reports, etc. It is hoped that this will not be the case and that institutional research offices will develop the ability and techniques required to keep pace with the new information demands. Institutional research offices seem to be the logical location for responsibility of implementing and maintaining management information systems.

In order to avoid being found wanting in the future, IR personnel must stay knowledgeable regarding all tested and proven MIS techniques, implement those techniques judged to be most beneficial for their institutions, be prepared to undergo some retraining and updating of their skills, and seek new staff with such new competencies as may be necessary for the expanded role of the IR office. The best way to lead is to be out in front when those around you decide to move. If institutional research offices hesitate too long, they may find that they have unintentionally forfeited their proper leadership role in the area of management information systems development.

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THE LEGAL AND REGULATORY GUIDELINES IN PLANNING INFORMATION SYSTEMS

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The past decade (1960-1970) has seen a rapid development of institutional research within higher education. Quantitatively, many more institutions now have an office or person by that title. The institutional researcher is one of a number of comparatively new titles found in the administrative hierarchy. The computer center, boards of higher education or statewide coordinating agencies, analysts and systems planners are other examples of new functions or titles. Many of these new titles are concerned with administrative functioning and in the development of information systems, either in their preparation, operation or analysis. Institutional researchers are and have been involved in information systems, as a part of their individual campus efforts or, as a part of the increasingly bureaucratic statewide organizations. Generally these efforts have been working with the existing systems that have developed on an **ad hoc** basis, but now trying to fit new requirements for data and analysis on a more comprehensive scale. The quality of the present systems varies widely but their use and function from the viewpoint of analysis and accessibility has been generally poor.

The more recent advent of a more systematic and planned information system at several individual institutions, the WICHE MIS Program, and the SRG Program at Toronto, and increasing state and national agencies concern, signify a modification of the past **ad hoc** development to a more systematic approach. The institutional researcher now faces these definite emerging concerns as to information systems in institutions of higher education and will ask as to his own part in that concern. The analysis and interpretation involved in information systems development will eclipse the present institutional research functions in administrative decision-making. To a rather significant extent the development of information systems and the subsequent utilization of them is within the present interest of the institutional researcher and will most definitely affect his future responsibility and probably his job!

We can then forecast 1) the demand for information will increase as technology, planning and budgetary procedures require more sophisticated data, 2) that there will be an emerging personnel group engaged in information systems and requiring a distinct talent for planning and analysis, 3) that institutional researchers must involve themselves in the development of information systems, 4) that information systems involve more than computer-oriented procedures, and 5) the subsequent development of management information systems will be an evolutionary process, complete with models and simulation studies.

The development of information systems will be a long and continuous process, for there are many problems in definitions of the objectives of the institution, the structure of the system and its operation, the development of computer hardware and software, the classification for data files and, more important, the analysis and interpretation for management decisions. One important consideration that may be overlooked in the emphasis on input, objectives, hardware and analysis is the current and future use of information in the system as to legal and regulatory requirements for collecting, storage and dissemination. The question is raised as to what constitutes the proper control of information? Legal guidelines include not only existing legal laws and state or federal regulations concerning data but the "quasi-legal" and perhaps common sense guidelines necessary to protect data from unauthorized use or to maintain data in accessible and low cost storage.

The purpose of this paper is to present a number of the legal and regulatory guidelines in planning information systems. Such guidelines are general and not mutually exclusive but serve the purpose to illustrate certain characteristics in information control. The planning of an information system should contain these and other more detailed guidelines. Costs and methods of storage or dissemination as well as software procedures will be effected by the criteria of information control and data accessibility.

An initial definition of information systems should be made for the purpose of this paper. Presently information systems are somewhat uncertain in terminology and meaning, however, an information system is the totality of data for the college, organized for maximizing the operation and objectives of the institution. Much of the output would, of course, be in the form of computer reports, the input in the form of data elements in combination form. Information systems then encompasses the broader look at data, computer-oriented but involving all data useful for decision making and analysis as well as data or procedures used within the institution.

The discussion of an information system is not restricted to a computer-oriented system but must be predicated upon the total data information and its function, a limited concept, perhaps adequate to design an effective computer system but lacking the full comprehension of the total data collection and procedures, does not seem to be valid for an information system in its broadest sense. Thus it is recognized that planning an information system may involve the use of all data but for management information and in high level decisions only a part of the data may be used.

Planning Guidelines

Information systems presently exist in all institutions. Their format and content may vary and most probably differs from an ideal one, but they do exist. In planning for information systems on a more systematic basis, the existing must be dealt with as well as any new approach or modification.

The planning for an information system can, if a properly conducted survey of existing data elements, storage and dissemination procedures is made, be revealing as to the present good or poor procedures. The disposal of old records, the "system" of dissemination currently followed will usually reveal a number of potential or actual problems in handling confidential records. Storage problems are often present because there has not been a careful application of new methods and equipment. As a function of changing over to a better information system new procedures should be carefully done to provide adequate safeguards for storage. An initial guideline is then to document what is now happening in order that new "changes" will be accomplished with the concept of protecting confidential data and provide adequate storage facilities. A definite objective is to "upgrade the technological aspect of data storage and dissemination so that efficient procedures are met and concurrently better procedures for handling data are accomplished. One outcome of a new information system is to eliminate present problems of storage and to reduce costs. To remedy past or current mismanagement can be a realistic objective and further prevent poor handling of data and future legal problems. A survey or analysis of current procedures is necessary to note just that feature of how things are done so that the past can be corrected if necessary but at least known.

One of the benefits of establishing new information systems is the opportutnity or necessity of devising better disposal procedures for records and data. As an example, many departments maintain files on students long after the student leaves or graduates from school. These academic files become a potential hazard for disclosure of confidential or personal information. In planning a better system such records could be purged entirely for destruction or returned to a central clearing agency since the information is no longer necessary after the student graduates. Further storage of these records can be reduced in the academic departments by such a procedure.

A second guideline in planning the information system is that the total system is composed of many sub-systems, some of which need not be incorporated into a computer-based information system or into management information systems per se. The input to a general computer-oriented information system need not include all information; excluded would be information of a confidential nature, either involving student or college personnel. These sub-systems can be easily identified, carefully secured and documented so that they do not become generally known, and are maintained in a secure and private file system. As an example, there are student personnel records on civil and police action and student court cases which should receive no inclusion in any general management information system; but such sub-systems should be identified and their existence known. In addition, some information, while not of a confidential nature, need only be maintained by those who have the need to know and released on the same need to know basis. Responsible official action by the proper college official can constitute a great protection against libel suits when data is released in an inappropriate manner. Control of that information through sub-systems of data is the best preventive measure against improper disclosure and retaining confidential files.

A third guideline concerns the status of "hard copy" versus "soft copy." In our haste to determine an efficient, usually computerized information system the original documentation becomes a part of the input and not a part of the computerized process or output. Most of the procedure then has information as a secondary source and one becomes "accustomed" to using this other than the original document. Questions may arise as to what data can one maintain in hard copy (back-up) and to what extent do states or colleges mandate the maintenance of hard copy rather than soft copy computer data? State or university regulations may vary in their requirements for original document files. Audits by outside agencies may require substantial document of financial records in hard copy, more particularly in accounts. Primary emphasis in business records require that documents be maintained for a certain time period of usually three to five years or that a legal record does not exist except in six copies! Further, micro-filming of certain business or student records may be recommended but not necessarily legal in all cases. Original transcripts and bills may be required by state regulations, quite aside from their validity in the system.

A fourth guideline is output data or information and how should this data be made accessible and maintained. It should be recognized that through better information systems and model development there will be greater quantity of data, more complex data and a need to disseminate such information with some provision for interpretation and understanding. Perhaps the most important factor may be that those who are not in the management group and not participating totally in the information system may seriously resent the vast accumulation of data that will be so readily available. All the generalities about the "big brother computer" and a "secret data bank" will immediately surface to create problems of misunderstanding.

Output can be carefully systemized on the basis of several criteria: Confidential data, need-to-know access, job-responsibility access and random basis. Thus certain information may be coded as confidential and limited to prescribed individuals. The need-to-know category may be used to determine classification of individuals or offices relative to their actual function and responsibility. In this way their requests for data would be limited to certain reports beyond which they would require special permission to ask for the data. Much of the data, however, would be accessible to everyone and the only limitation would be that of conservation of reports on a systematic basis and cost of productions. Thus the access mechanism, either terminal or regular requests, can be handled so that regulatory procedures are in force relative to accessibility.

Fifth, the computing center, as an administrative function only, would be a closed shop as to actual output of reports or accessible by terminal. To this end requests for data by mail or terminal would be controlled, both in efficient use of facilities but in actual access to the data. However harsh such a procedure may appear the single disclosure of confidential data could be much more severe than the normal exercise of restraint in access to data. For the more research or academic use of the computer the "open shop" would be appropriate, the smaller institution with one shop would have to devise appropriate measures in access to file tapes or other storage means.

Sixth, terminology and symbols used in new information systems and models may become the accepted format of data input and output. The criteria for establishing future budgeting procedures and "legalizing" certain definitions may be taken too hastily from created standardizations. By such a statement we need not ignore the present need for standardization of terms and definitions for information systems, but there must be an awareness of the sometimes shallow acceptance of any effort as a means to an end. What is done in the name of prediction today may be accepted criteria tomorrow. What is accepted as a guideline may be a legal requirement. Careful consideration should be given to the development of any system so that it serves decision-making and problem-solving and does not create a pseudoscience of definitions and standards. Those working in quantifying objectives and operations should carefully consider the development of communicative terminology and symbols knowing their adoption is often made through efficiency and expediency.

The seventh guideline is in the input-storage-output regulatory scheme. As information systems are designed and implemented the use of controls are recommended to insure standardization of agreed upon input, accepted information storage and retrieval and a control on information released to outside agencies. The latter can be accomplished by having one office **coordinate** or **control** all releases of data, data for questionnaires, surveys, or official statistics to any outside agencies. Inaccurate figures or unauthorized disclosures can be stopped by proper coordination without rigid censureship or stifling any academic prerogative. Singularly, coordination of input and storage can be placed so that the function of auditing and control will furnish accurate data for systems.

Future Concerns

This paper has discussed certain general legal and regulatory guidelines regarding the planning of information systems. These guidelines need careful and far more detailed attention than presented here. There are also developments which will have an influence on information systems and upon the legal and regulatory guidelines.

The role of management in institutions of higher education is undergoing change. Students are assuming more of a responsibility in governance than before as will faculty. The university is being asked to substantiate its reason for maintaining certain records, particularly those on students and faculty. Concurrently, agencies from outside are asking for more detailed accounting of finances, faculty time and space utilization procedures. The budgetary process is being surveyed with simulation models and long range cost planning models. Information systems designed with these emerging groups and concerns will be asked to perform for the outside agencies while attempting the act of working under a different management concept. If one subscribes that information systems are for management (however defined) and management changes, then will information systems change? Will gathering data on students and faculty be refused when these groups assume that the particular piece of information is no longer necessary and is confidential? What guidelines will be followed in restriction or surveys and questionnaires? Will there be a collision course when an outside agency asks for data and certain management will not supply such data?

For on one hand there is the increase in data gathering, storage and dissemination on a national scale and yet a strong resistance is growing against such a system. An awareness by the college community is acting against a system which provides statistical or quantitative descriptions of education, the gathering of data, questions asked in discussion of student rights, law suits and legal problems. The concern is how much information is necessary to operate an institution of higher education, what information should be given for what purpose, what proper safeguards should be used to protect individual rights, and the provision for **valid** data to be used in decision-making within the institution.

The changing collegiate scene, the future of the university will most definitely affect the operation rationale for information systems. Management may be very different as will the methods of education itself. The legal guidelines are in a state of transition as they reflect education itself.

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SOME THOUGHTS ON PROGRAM BUDGETING IN A TIME OF CRISIS

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Each of us has unique problems, however the events of the past few weeks have certainly demonstrated what a tenuous situation most of us are faced with as institutions. Tomes have been written on the factors, forces, and effects that are threatening all institutions of higher education. Who is reading them? Student and non-student militants from Peking to Berkeley have declared war in loud voices. Who is listening? Administrators are placed in the middle of faculty who threaten to leave if order is not restored (along with the status quo), students who threaten to strike if their demands are not immediately met, legislators and trustees who want "the bad ones" fired or expelled, alumni who expect an immediate return to the "good old days," parents that are concerned about the rights of their "children" (even if they are 6 ft, 200 pound, brick throwing men), the escalating costs of the process, and a general public that is asking "Why can't you control it all?" The administrative responses have been to increase security measures, add some new programs (with more concern to mechanics than to fundamentals), put some students on committees and to wait for the next onslaught.

Fact finding commissions study incidents in great detail, find that all parties are partially to blame and go away recommending better communications, some new procedures, and the formation of new committees. If the committees are formed they draft numerous procedural recommendations, support new activities and studiously avoid attacking the serious questions of objectives and long range goals. In this setting, program budgeting and management information systems seem, and generally are, irrelevant.

However, the real solutions to the current crisis demand serious questioning and quantification of our objectives and our goals. This questioning must be done by dedicated faculty and students working together with "futuristic" administrators that can provide both analytical and logistical support for evaluating objectives and implementing plans in consonance with those objectives. Campus security cannot be maintained by fences and guards. A commitment to unity of purpose on the part of students, faculty, and administrators is the strongest defense we can employ. It becomes painfully clear that if the options are unity of purpose or no university at all that very few will opt for the latter.

How then do we achieve unity of purpose? First, by deciding what the purpose is. In the short run the sheer problem of keeping the institution open may provide a starting point. However, unless there is a way to provide strong identification with the accomplishment of objectives and with the internal structure of the university it is hard to see how this can be anything but temporary support. It is also important for the participants we seek to unify to see how they relate to the external environment.

It is very difficult, in the long run, to relate to a president. Yet, for the most part, this is where students, faculty, alumni, trustees, legislators, and the American public place the responsibility. None of these groups however are willing to grant him the authority that is needed to exercise the responsibility so given. For example, closed classes are a major problem at this university. Students demand solutions but do not consider the possibility of reducing student free choice of courses and hours, faculty demand a solution and focus on new scheduling systems rather than on questions of curriculum and faculty teaching loads. Legislators look at space utilization data and can see no reason to have closed courses. Administrative edicts merely bring on the wrath of all parties.

We can attribute this to parochial viewpoints, lack of understanding, conflicting interest, historical conservatism, and a host of other ills. But if we do we are most likely wrong. On a one-to-one basis faculty and students are willing to make enormous sacrifices. What they will not do is to attempt to represent the sacrifices that other faculty or other students would be willing to make. Thus, the demands are for constant satisfaction of all populations without sacrifice to any. However, within the population there is great capacity for sacrifice if the alternatives are made clear. For example, how many programs have been started or been kept going on an ad hoc basis with faculty working after hours on a contributed services basis because budgets were tight? How many student service organizations have undertaken (and frequently searched for) programs to benefit the campus? I believe that the commitment and resources are "out there"; the problem is how to capture and unify them in common support of the institution. In short how can we bring it all together?

There are two aspects to the problem: One is participation; the other is communication. Stanley Hoffman in the Winter 1970 issue of **Daedalus** presents the best discussion of the dimensions of participation in a university community in an article "Participation in Perspective." I commend it to your attention. After a thorough discussion of alternative styles of governance and possible alternatives he concludes that: 1) An interim participative structure and process should be instituted for the purpose of establishing objectives and a sense of purpose; 2) that this structure should include analytical and logistical support from experienced "futurists" drawn from among the university's executives and legislators, and the 3) the central focus of this interim work should be on the long range future of the university.

Since the topic of this conference is communication I am sure that others have covered a variety of the aspects and techniques for communication with the various communities, so I will limit my coverage of this point to an interim participative structure.

What would this interim structure look like and how would it work? Obviously there are different answers for each institution and we have certainly not settled on one here. I would suggest that for a large university that a combination of traditional college structures and a university-wide structure might be utilized. For example, consider a University Committee constituted of equal representation of student, faculty, and administrators and charged with the responsibility for developing the dialogue and process for establishing long range objectives. Consider further that discussion groups of faculty and students are created, perhaps by random assignment of students to faculty. The purpose of these groups being to study and react to proposals by the University Committee.

Further let us assume that communications between this committee and the discussion groups will flow through college and departmental channels for purposes of information, coordination and communication (when Professor Jones leaves town someone must find another faculty member for this group). If the University Committee is constituted from existing representative bodies it can go back to these bodies with recommendations that are most appropriately the perogative of those bodies and provide them with substantive data from the discussion groups in support of those recommendations.

In addition there should be groups constituted along normal departmental and college (or in the case of administrative units – division) lines and within student organizational units. These groups would also communicate through existing channels with the University Committee.

The first order of business would be establishing both qualitatively and quantitatively what we are, who we are, how we relate both internally and externally, what we like and don't like about what we are, who we are, and about present internal and external relationships. From a practical standpoint it would be sensible to institute a rather dramatic budget moratorium during this interim period. Such things as holding back on new programs or new program commitments, putting a temporary freeze on travel, salary raises, major equipment purchases, etc., would certainly give the process more creditability and perhaps provide some of the resources needed for the future. The president should be the authority for variance from these limitations.

Obviously the data requirements for this first step are fantastic. So are the time demands on the part of participants. Data would be required from the resource areas of financial, personnel, equipment, and space as well as from the input-output areas of students, research, and public service. The data should support statements such as "we certainly devote roughly x dollars and y percent of our total current financial resources to undergraduate instruction. The largest part being in the departments of ___, ___, ___." Or "sponsored and departmental research represents over x percent of the work of the following departments: . . . ." Careful attention should be paid to innovative practices either in operation or in design phases and some qualitative and quantitative estimates should be made of their potential impact. In all of these activities it is wise to be roughly right today than to be precisely wrong six months from today. Institutional Research would play a special part in this effort, one which many of you are well equipped to do, that is, to serve as the information harmonizing and analytical support team. For years you have been combining student, financial, space and personnel data for outsiders. Now there would be a real reason to do it for internal purposes. Coordination of studies, which has been your forte would be taxed beyond belief with this proposal.

Also, a great deal of attention should be given to the "how things work" aspect of logistical support. If proposals are developed without a recognition of existing conventions and procedures they will be ten times more difficult to evaluate or implement and will make what is probably a reasonably efficient bureaucracy appear to be an impossible logistic hurdle. This also speaks to the need for strong central control of the fact providing function. The purpose of this control is to assure that participants get consistant data and not to withhold data. Quantification of "what is", is vital to the process of what should be. But all participants should be working within the same basic data framework.

Since no university can be all things to all people and since as a practical matter there are relatively limited new disgressionary resources available to any university the process should be bounded by the concept of the whole and the parts that organic functions play in fulfilling the whole.

For example, as a part of a recent statewide analysis of faculty workload we attempted to describe the current financial activities of the universities by type of service and by process served through the use of year-end financial statements, faculty service reports, and a rather crude analysis. A threefold classification of type of service based primarily on organizational units showed that for all 12 state assisted universities:

$292.4	million or 58 per cent was spent in favor of Primary Academic Services or direct instruction, research and public service.
$116.4	million or 23 per cent was spent for Student Services (including dormitories, health care, registration, etc.) and Learning Services (including libraries, telecommunication centers, and computing centers).
$ 95.0	million or 19 per cent was spent for General Support Services (including central administration maintenance of plant and supporting auxiliaries, such as, bookstores).
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$503.8	Total

A further analysis of these total expenditures by process of instruction and related research and related and public service indicated that:

$353.0	million or 70 per cent was spent in direct instruction and student services plus an allocation of learning services and general administration.
$ 68.7	million or 14 per cent was devoted to sponsored and departmental research plus an allocation of learning services and general administration.
$ 82.1	million or 16 per cent was directly attributable or allocatable to public service operations.
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$503.8	

For Ohio State the patterns were:

By Type of Service:

$124.9 million or	68 per cent	Direct Insturction, Research and Public Service
29.8 million or	16 per cent	Student or Learning Services
28.9 million or	16 per cent	General Support
$183.6	100 per cent	

By Process

$100.3 million or	55 per cent	Instruction and Related
36.9 million or	20 per cent	Research and Related
46.4 million or	25 per cent	Public Service and Related
$183.6	100 per cent	

Even gross data, such as, these can serve as a starting point for describing the whole. As the various groups begin formulating objectives and quantifying them into specific programs they can be evaluated in terms of how different is "what we want to look like" from "what we now look like." Inherent in this broad approach is the intent to highlight trade-offs within the context of the current "whole" of resources as well as to develop specific strategies for increasing resources within the context of objectives.

Certainly a program budgeting approach would be a valuable adjunct to this effort. My specific preferences as to the mechanics for this approach still favor radical incrementalism and highly participative management. By this I mean that decentralized fiscal responsibility for all funds should be established at department and college levels with accompanying central agreement upon and control of the definition of "continuation" needs. In our case this has meant last year's amount, plus or minus centrally calculated workload increases, plus minimal cost of living or price level increases. All other resources are allocated based on specific incremental programs developed within the context of a departmental and college statement or philosophy and long range goals and translated into specific new programs or improvements of existing programs. Trade-offs between continuation and new or improved programs are encouraged and have represented as much as 3 to 4 million per year in "instructional" budgets.

By taking an incremental approach we have been able to guarantee long range (six year) funding on new and improved programs and to break the annual budgeting cycle by having at all times a list of approved but not funded programs. The approval process includes a departmental, college and central university priority assignment. Continuation needs are calculated and met annually within the restriction of previously approved and funded segments of new or improvement programs and the overall restriction of total resources.

Although the process here has not fully embraced sponsored programs and restricted funds, it is designed to do so. In addition, this is the first year that we have developed six-year plans for all non-academic units so that loop remains to be tested. However, the relative success we have had with using Six-Year Plans for Academic Colleges and Departments and for the Learning Resources support (library, computing center, etc.) of these Colleges and Departments over the past few years has been encouraging. It is my hope that this vehicle can be expanded to accommodate the needs for greater participation in the setting of priorities and in developing ways of meeting these priorities over a long range period. Ideally it would provide a way of translating issues into programs and assigning priorities to these programs in accordance with objectives. Further it would enable us to develop a consensus about where we want to go and focus attention on how we can best utilize our resources to get there.

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PPBS AND THE SMALL INSTITUTION

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Historically, competition has not been recognized as a word in the lexicon of higher education. Competition carries with it the connotation of cost minimization and output maximization, the traditional concerns of business and industry. In this denial, the budgetary process is viewed as an annual affair during which anticipated funds are allocated to the various organizational components or divisions. The budget itself serves to establish and enhance incrementalism, that is, increasing expenditures each year to retain the status quo.

But the contemporary institution of higher education, particularly the small liberal arts college, finds itself confronted with the everyday problems of a competitive world: Rising costs and rapid change. To grow, in fact merely to survive, it is compelled to provide more comprehensive, sophisticated, and complex programs of instruction, research, and allied services than ever before, to compete for students and faculty, to keep abreast of the advance of knowledge and technology, and to expand and modernize its physical plant. In the final analysis, the institution must vie for funds on the basis of a proven capacity for the attainment of stated goals. Success for the poorly endowed is contingent, in part upon the ability to successfully employ any and all techniques that promise to aid in the decision-making process. It is in this context that we will discuss Planning, Programming, and Budgeting and the small institution.

Planning is one of the functions of the top-level administrator and, as such, involves the selection, from among alternatives, of institutional goals, policies, procedures, and programs. It is, thus, decision-making affecting the future direction of the institution. The basic plan is defined here as the institution's purpose or goal. An argument can be made that all higher education institutions have the same goal – to advance knowledge by means of demonstrated scholarship. But this seems inadequate; it is almost as though one were to say higher education is higher education. Rather, a basic plan may be to thoroughly revamp the science curriculum; it may be to keep the institution small, simple, and personal. Or, it could be to assume a leadership role in the community. Programs are a complex of policies and procedures, ordinarily supported by necessary capital and operating budgets and designed to put into effect a course of action. Planning, Programming, and Budgeting (PPB) is itself a plan, a statement of expected results or outcomes expressed in numerical terms. Because of its concentration on achieving the best way and because of the attempt to secure consistency, PPB tends to minimize costs. It results in directed effort in the place of individual and piecemeal activity. It can result in studied decisiveness and designed action, as against hasty responses to sudden crises. In short, PPB gives rise to efficient, informed and coordinated effort.

Even where uncertainty causes program plans to go awry, there is a better chance for bringing about economy of effort by Planning, Programming, and Budgeting than by not doing so. To the extent that the unforeseen can be anticipated or circumvented and plans can be tolerably accurate, it is certain that the programs engaged in will be successful at the least cost.

James Farmer, in **Why Planning, Programming, Budgeting Systems for Higher Education?**, states that the components of PPBS "include an organization (to perform PPB and evaluation), the technology, some data processing service, and an organization policy of implementation."[1] As one method of implementation, he suggests that a unit be established to perform discrete planning studies. He states, however, that:

> "There is a serious constraint on such studies. Since no change has been made in the reporting system, data base, or organization, the necessary data may not be available for the specific problems given to the planning studies unit."[2]

But to require change in the institution's reporting system, data base or organization is to ask for a detailed and comprehensive systems analysis prior to extensive PPBS involvement. Here, systems analysis is defined as a study for the purpose of 1) understanding the present structure, operations and goals of the organization and 2) defining the requirements and constraints which have to be met in the design of an information system which draws upon necessary data. The need for such an initial approach is emphasized by the all too frequent confusion, overlapping and even contradiction that is found in data collection and final reporting. If such problems exist it may be because the development of information systems (not necessarily computerized) to meet the day-to-day needs of the institution has itself proceeded in an uncoordinated, piecemeal manner. While the effectiveness of an institution of higher learning will be determined ultimately by the quality of its academic programs, certain academic objectives are realizable if sufficient, necessary, and reliable information and data are readily accessible in an interpreted form to provide the basis for decisions about allocation of resources, curriculum, staffing, and the like.

The need for a comprehensive system analysis is magnified when one considers the problems which impair the successful use of a Planning, Programming, and Budgeting System. A recent review of relevant doctoral dissertation research[3] lists two major difficulties: 1) Estimation of costs and 2) educational activities which are ambiguously defined and quantified. The first difficulty may arise due to an inadequate accounting system or because of uncertainty about the method for distributing general costs. The second difficulty is encountered when, for example, a count of students emanating from the registrar's office differs from a count out of the business office. Therefore, for many a small institution, program planning and budgeting – ostensibly for the purpose of better coping with uncertainty – is itself uncertain vis-a-vis successful implementation. There is the matter of a new and unfamiliar technology and, in the absence of a sound information base, there is this gargantuan concern as well: Where and how do you begin in the development of a sound information base?

The first step is to design a study plan which essentially views the institution as an information system. An outline of activities for Phases I and II of a three phase study is given in Appendix A. One such system is depicted in Figure 1.

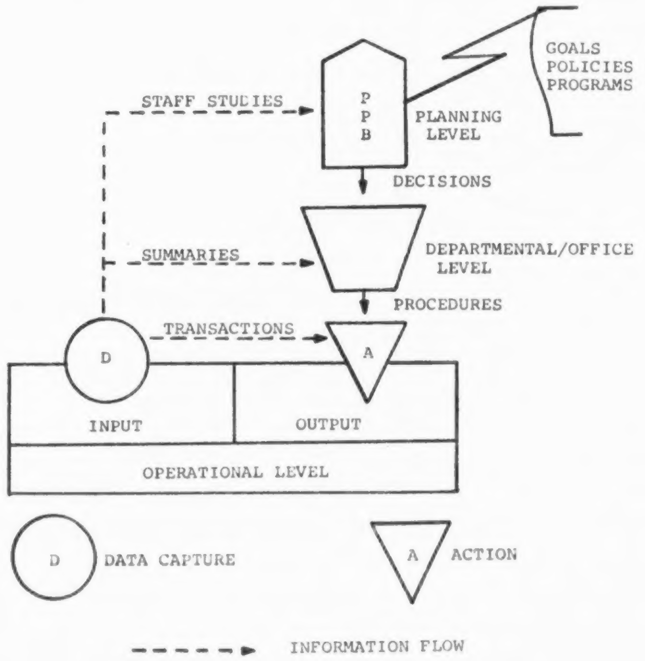

FIGURE I. GENERAL INSTITUTIONAL INPUT-OUTPUT SCHEMATIC.

In the words of John Hamblen in his recent paper "Institutional Research Today, Systems Analysis Tomorrow":

> "The kind of study which I think is required would take the institution apart bit by bit (on paper that is) and reassemble it again with the goal of creating an organization in which the objective of having an efficient data system is placed secondary only to the basic objectives of the institution"[4]

Phase I of the study should be initiated in terms of a broad overview of the institution as a whole: History and background, educational goals and objectives, and major programs, policies and practices. This can be conducted in a relatively few man-weeks of time. Next, the institution's information processing should be divided into a series of goal-oriented activities – that is, activities that support the major goals and objectives of the institution. To accomplish this definition of goal-oriented activities requires the gathering of data about the present information processing activities in terms of program resources or inputs, program outputs, and sources of income. The upshot of this work is the ability to view the institution as an integrated system in terms of broad activities, each of which is related to the basic goals of the organization. The institution is then in a better position to decide where to focus further study effort so that it will correct any data deficiencies.

In Phase II, analysis is directed toward informational content that is really required, as opposed to that which has just grown. Phase II deals with an optimization process that is basic to the institution. Thus, the system being optimized is not merely educational information processing; it is the total organization in programmatic terms.

Completion of Phases I and II (estimated elapsed time: nine man-months) will make available:

> A broad overview of the institution and its goals and objectives in order to achieve an educational information system design which is oriented to the institution.
>
> Information about the structure and operations of the institution.
>
> Information about the resources (professional and non-professional personnel, finances, facilities) of the institution and about the students.

Phase II specifically will have determined the essential content of the educational information system for required functions such as Planning, Programming, and Budgeting. It would be the task of Phase III to design and develop effective solutions for defined requirements that are unmet. Note that the analysis proposed attempts to look upon the institution as an integrated system. Rather than isolating organizational components by neglecting their interactions with other parts, an effort should be made to find what interdependencies are important. While a systems approach may not of itself be sufficient, it is certainly necessary for truly viable planning, programming, and budgeting.

PPBS and the aforementioned preparatory analysis is the proper responsibility of an office of institutional research or studies. If this office truly serves in a staff capacity to the chief administrative officer, then a primary task is to assist in the planning function. But traditionally, the work of institutional research has centered upon the collection of statistical series data; hence, the orientation has been more local than global – in a sense, more constrained than expansive. This is particularly true in respect to PPBS. For a number of reasons, budgeting and neither planning nor programming has gained notoriety as the dominant activity. As a consequence, PPBS is often mistakenly thought to be synonymous with accounting.

> "PPBS, however, is **planning**, not accounting; planning is the responsibility of administrators, not accountants. If accountants are involved deeply in the process, the purpose of PPBS is defeated."[5]

The initiation of PPBS should not rest with the business office (or any other operating-level component or subsystem); rather, it should rest with that office which possesses the broadest institutional perspective.

My purpose in this paper has been to stress the importance of a comprehensive information systems study preliminary to involvement with PPBS. In my opinion, this bottoms-up, as opposed to top-down, approach to the acquisition of planning and decision-making information will result in added value. The development of PPBS will be facilitated; in addition, general institutional operation will be strengthened. The two, PPB and general operation, are mutually supportive.

Appendix A

I. Phase I – Understanding the Present Institution
  A. Activities
    1. Interviewing personnel.
    2. Searching manuals and records.
    3. Sampling and estimating data.
    4. Documenting messages, files and operations.
      a. Message Sheet
        (1) From Whom?
        (2) To Whom?
        (3) What is the information?
        (4) What is the data for?
        (5) Media
      b. File Sheet
        (1) File name and location?
        (2) Storage medium?
        (3) Access requirements and sequence?
        (4) Content qualifiers, how current and retention, where used?
        (5) Message list (entries) with volumes?
      c. Operation Sheet
        (1) Performed by?
        (2) Triggered by?
        (3) Input and Output?
        (4) Processes performed?
        (5) Resources used?
    5. Formulating activities and documenting with cross-reference to file, messages and operations.
    6. Preparation of a resource usage sheet.
      a. Organization chart.
      b. Personnel, equipment, materials and miscellaneous costs by organizational breakdown and by activity.
    7. Evaluation

II. Phase II – Determining Systems Requirements
  A. Activities
    1. Analysis and definition of future objectives.
    2. Modification of existing activities to better serve future objectives.
    3. Analysis of activity requirements in terms of inputs, outputs, operations and resources.
    4. Analysis of measures of effectiveness for evaluating how well the new system will meet the goals.
    5. Obtain future planning data for the analysis in this section.
    6. Prepare documentation of required systems functions.
      a. Input-Output Sheet
      b. Required Operation Sheet
      c. Resource Sheet for Required Operations
        (1) Personnel and costs
        (2) Files
        (3) Office equipment and costs
    7. Define the measures of effectiveness as they may be determined from these areas:
      a. Cost
      b. Time
      c. Accuracy
      d. Reliability
      e. Flexibility
      f. Security
      g. Capacity
      h. Quality
      i. Acceptance
      j. Efficiency
    8. Evaluation

Any views expressed in this paper are those of the author. They should not be interpreted as reflecting the views, official opinion or policy of the Regional Education Laboratory (RELCV).

[1] Farmer, James. *Why Planning, Programming, Budgeting Systems for Higher Education?*, Boulder Colorado: WICHE, 1970.

[2] *Ibid.*

[3] Piele, P.K. and D. G. Bunting. *Program Budgeting and the School Administrator: A Review of Dissertations and Annotated Bibliography*, Eugene, Oregon: ERIC Clearinghouse on Educational Administration, 1969.

[4] Hamblen, John. "Institutional Research Today, Systems Analysis Tomorrow," *AEDS Journal*, 1970, Vol. 3, No. 3.

[5] Katzenback, Edward. *Planning Programming Budgeting Systems: PPBS and Education*, Cambridge, Massachusetts: The New England School Development Council, 1968.

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PROGRAM BUDGETING – AN APPROACH TO THE EFFECTIVE ALLOCATION OF AVAILABLE RESOURCES IN INSTITUTIONS OF HIGHER EDUCATION

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Utah System of Higher Education

Minor Program Budgeting Approach

When speaking of a "minor" program budgeting approach, I am making reference to a feasibility analysis of proposed programs based upon the guidelines provided by the program budgeting approach. Even though this section is primarily concerned with a specific program change, some of the ideas would also be helpful in the initial stages of implementing a major program budgeting system.

Organization

The proper functioning of this approach requires a functional organization which encourages and provides direction in initiating new program proposals or changes in existing programs.

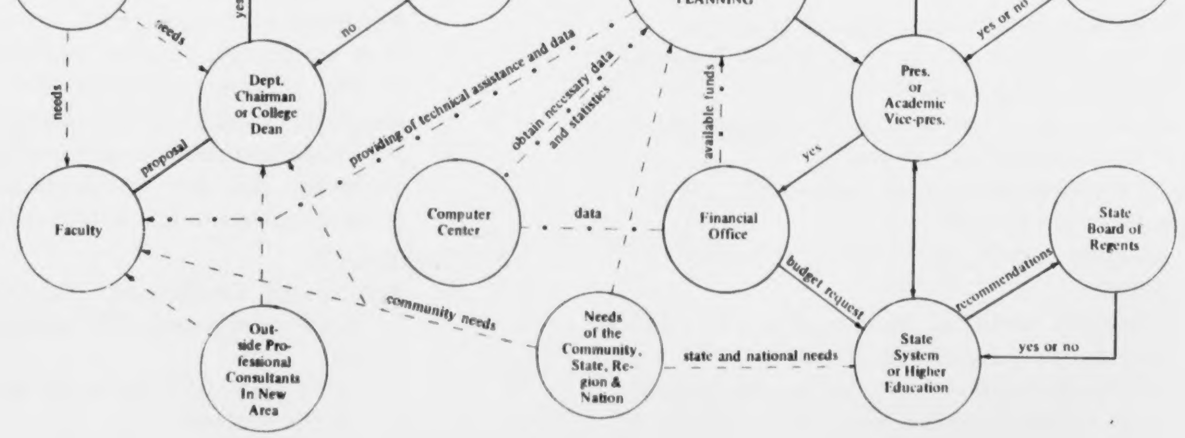
In the program budgeting approach, both the academic feasibility **and** financial feasibility must be given equal consideration. This requires that there exist an interface between the academician and the financial management officer. The logical location would be the office of Institutional Research and Planning. This office might consist of two major segments administered by an Associate Director of Planning and an Associate Director of Research. This office should be staffed by personnel having the respect of both the academicians and financial officers. The Planning Office may be organizationally under the president or academic vice-president, but functionally would be closely allied to the financial areas of budgeting and audit. The reason for the organization being set up in this manner is emphasized by the following comment by Coombs:

> "It is an illusion to think that a college can do its best when responsibilities are divided down the middle, with "academic affairs" in the hands of the faculty, to be decided without reference to economic considerations, and with "financial and management affairs" in the hands of the president and trustees. The most important economic decisions – the ones which determine how effectively a college's available resources will be allocated and utilized – are actually made by the faculty when it decides upon the curriculum, upon teaching methods and schedules, and upon other aspects of the educational programs. Once these decisions are made, the task of the president and trustees is to try to find enough money to validate them. But if no one – either the faculty or the administration – is obliged to evaluate the educational and economic viability of the arrangements, the college may be using its resources very largely to support various convential forms which enclose and obscure relatively inferior educational substance."

All new program requests would first be analyzed by the Planning Office and then presented to the governing board through the president or adademic vice-president. A possible routing of new program proposals is presented in Figure 1.

FIGURE 1

ROUTING OF NEW PROGRAM PROPOSALS IN AN INSTITUTION AND STATE SYSTEM OF HIGHER EDUCATION


Students
Faculty Council
yes
OFFICE OF INSTITUTIONAL RESEARCH & PROGRAM PLANNING
if no St. Bd.
Board of Trustees
needs
yes
no
yes or no
needs
Dept. Chairman or College Dean
providing of technical assistance and data
obtain necessary data and statistics
available funds
Pres. or Academic Vice-pres.
proposal
yes
Faculty
Computer Center
data
Financial Office
State Board of Regents
budget request
recommendations
community needs
Out-side Pro-fessional Consultants In New Area
Needs of the Community, State, Region & Nation
state and national needs
State System or Higher Education
yes or no

Establish Objectives

The first step in making a proposal is to state explicitly the objectives and goals of the new program (i.e., educate and graduate 20 associate degree nurses each year) and indicate how these objectives will assist in meeting departmental as well as institutional objectives. This assumes that the institution (meaning the faculty and the administration) has already established institutional objectives in agreement with the traditional role of the institution or as assigned by a governing board.

Before the program objectives can be explicitly stated, a "market" analysis may be required. A "market" analysis is the act of determining a need for a specific program. This need may come from students enrolled at the institution requesting such a program or possibly the local community is in need of certain types of trained personnel. On the other hand, the program may be required to support existing programs, to enhance quality education or provide students with a basic foundation upon which to build.

Identify Alternatives

Each proposal should provide alternative courses of action which would effectively accomplish previously stated objectives. The alternatives should include opposing strategies, policies or specific actions as well as required resources, such as faculty, staff, equipment, space, etc.

Each alternative should be completely thought through in terms of effectiveness or comparative results. By following a systematic procedure, various alternatives can be compared in respect to results received from increments of resources spent.[30] By weighing the results and the resources needed to achieve those results, the alternative chosen will represent the most effective allocation of resources in achieving the objectives previously established.

Format of Program Proposal

The following represents a possible format which an institution or state governing agency might require of a faculty member, a department, or college to follow in submitting new program proposals. The detail required in the proposal will be a function of 1) existence of a planning office with technical assistance, 2) the form in which data is available, whether in files or on computer tape, and 3) the desire for justifying resource allocation to a new program.

I. Program Objectives:

- A. What are the objectives of the proposed program?
  - 1. What new degree, certificate or diploma would be offered in the program?
  - 2. In addition to offering a specific degree, what other results would be achieved?
  - 3. Why is such a program being proposed? Be explicit in terms of:
    - a. Meeting needs of students presently enrolled;
    - b. Changing needs of local community, state and nation (if possible, be specific in terms of numbers of trained personnel needed, areas of likely employment and changes in the society or economy which require this type of education);
    - c. What other institutions in the state offer similar programs (indicate the degree of similarity).
- B. How do the objectives of this program relate to the objectives of the administrative structure within which it will be located? (Be specific in terms of existing objectives).
- C. How will the objectives of the new program meet already established institutional objectives and how does the program relate to the role of the institution?

II. Alternatives:

- A. What possible alternatives are there in achieving the objectives of the proposed program? These alternatives may possibly be developed in relation to some of the following (be innovative):
  - 1. Similar programs already in existence in the state and possible cooperative programs;
  - 2. Meeting the needs of the local community;
  - 3. Varying numbers of faculty and alterations in the administrative structure within proposing institution;
  - 4. The approach of the curriculum;
  - 5. The recruitment of students;
  - 6. Size of program in terms of enrollment and curriculum offerings;
  - 7. Period of time for implementation and etc.
- B. Narrow the alternatives to two or three based upon the advantages and disadvantages in achieving program objectives. (This may be quite subjective, but could be more objective if the system is sophisticated enough).

III. **Criteria for Evaluation** (the following information will be used where possible, in comparing the alternatives obtained above and also in comparing this proposed program with proposals submitted by other areas within the institution):

- A. Curriculum Content:
  - 1. Provide a list of courses (and credit hours) now included in the departmental curriculum which would be applied toward the new program.
  - 2. List the new courses (and credit hours) which would be added at the time the program is initiated and each year until the program is in full operation.
  - 3. What courses now offered in other departments will relate to this program?
  - 4. How would new courses (and special equipment) in the proposed program be used by other programs to enhance their quality?
  - 5. If outside consultants were used in developing or reviewing the new curriculum and proposed program, please indicate their qualifications.
- B. Enrollments:
  - 1. Anticipated Enrollments (first five years) both by head count and FTE enrollments by level (year):
    - a. How many of these would likely be majoring in the subject?

   b. Why would other students enroll and what areas of study would they likely represent?
2. Explain the most likely source of students who would be expected to enroll in the program;
3. If courses have been offered in this area, how many student credit hours were produced during each of the last five years? (indicate by areas of concentration);
4. How many students would likely complete the program based upon estimated yearly majors and attrition rate?
5. How might the proposed program affect enrollments in other departments or major areas of study within the institution?
6. What might be the effect upon the enrollment in similar programs at other institutions in the state?

C. Faculty and Staff:
   1. How many FTE faculty would be required when the program is initiated and during each of the first five years?
   2. What would be the required qualifications of the faculty?
   3. Describe the likely involvement of the faculty in research, administration and other non-teaching functions;
   4. What is the present faculty-student ratio in the department proposing the new program?
   5. How many staff and supportive personnel will be needed during the first five years?

D. Facilities:
   1. Library - are present library resources considered adequate? If not, explain how the library will need to be strengthened during the next five years. (Refer to the need for books, periodicals, primary source materials, special reference programs).
   2. Classroom and laboratory space - what new physical facilities will be needed in the first year, and what will be required during the following four years of operation. (Be specific in terms of square feet of space required and likely costs).
   3. Equipment - what new equipment will be needed in the first year and during the following four years?

E. Costs:
   1. The anticipated costs of the proposed program should be provided in the program budgeting format (Figure 4) and would be used for budgeting purposes if the program is approved by the proper governing board. All costs should be in terms of an on-going high quality program.
   2. What are the current operating costs for those departments involved in the planning of the program? (Should be in terms of total cost as well as cost per credit hour). Also indicate the departmental costs by area of concentration for the past five years and the anticipated costs for the next five years with **and** without the proposed program.

F. Funding:
Indicate the likely source of funding, whether it be local, state or Federal (specify amount by source for each of the first five years). Indicate specifically the total amount that would be requested from institutional funds that would have to be budgeted during the first five years.

Figure 2

Traditional Budget Format[a]
General Current Funds

Budget Categories	**Actual 1968/69**	**Budget 1969/70**	**Estimated 1970/71**
I. Instructional and General			
1. Instruction and Departmental Research			
2. Organized Activities Related to Instruction			
3. Sponsored Research			
.			
.			
.			
11. General Administration			
12. General Institutional Expenses			
II. Student Aid			
1. Scholarships			
2. Fellowships			
III. Auxiliary Enterprises			
Total Budget			

[a] Same budget categories for both revenue and expenditures.

Figure 3

Comparison of Program Budgeting and the Fiduciary Budget

Program Budgeting	Fiduciary Budget[a]
Requires the establishment of objectives and general roll assignments.	Sources of funds.
Alternative ways of achieving these objectives.	Constraints on receipt and expenditure of funds.
Resource requirements explicitly related to each major program and program element.	Aggregates of expenditures on: Administration Teaching and Research Maintenance Student Services
Actual present costs for each program element and projected costs next 5 or 6 years.	Legal and administrative accounting for funds.
Priority listing of new programs in terms of long-range planning.	Average cost ratios.
Levels and types of activity produced and specific as well as general results achieved.	Short time periods.
Interrelationships of changes taking place within the system.	Purely fiscal matters.

[a] SOURCE: Harry Williams. **Planning for Effective Resource Allocation in Universities,** (Washington, D.C.: American Council on Education, 1966). p. 15.

Figure 4

Program Budgeting Format For 1970-71
(Core Department or Program Element)

Categories for Resource Items & Results Achieved	Actual Resource Requirements, Results, and Costs			Res. Req., Est. Results & Request	Estimated Resource Requirements, Likely Results & Projected Costs			
	67/68	68/69	69/70	Budget 70/71	71/72	72/73	73/74	74/75
Enrollments:								
Headcount (Cumulative)								
Number of FTE Students								
Number of Student Majors (unduplicated)								
Resource Requirements:								
Number of Courses Taught								
Faculty (Actual Count)								
Research Faculty (FTE)								
Administrative Faculty (FTE)								
Staff (FTE)								
Graduate Students (FTE)								
Laboratory Space (sq ft)								
Classroom Space (sq ft)								
Results:								
Ave. No. of Credit Hours Taught/Faculty								
Ave. No. of SCH/Faculty								
Faculty Student Ratio (FTE)								
Ave. SCH per Class								
Ave. Size per Class (Classroom Utilization Percent)								
SCH – by External Students								
Total SCH Produced								
Number of Degrees Awarded								
Costs:								
Cost per SCH Produced								
Cost per Degree Awarded								
Cost per External SCH								
Director or Chairman (Admin.)								
Faculty								
Staff								
Equipment								
Supplies								
Benefits								
TOTAL BUDGET								

Summary

The program budgeting approach provides basic tools and criteria of measurement for making the best decision based upon a strong information base. Decisions supported by sound and well-directed institutional planning and research are much better than ad hoc decisions based upon little or no information.

It would suffice to say at this point concerning resource allocation that only by demonstrating exactly why funds are needed, how they will be spent, who will spend them and what **effect** these expenditures will have on the attainment of specified objectives can the governing board of an institution truly have a basis for approving or disapproving budget requests.

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UNIVERSITY EXPENSE ANALYSIS AND PROJECTION – AN ABSOLUTE DOLLAR APPROACH

Gerald L. Shawhan
University of Cincinnati

INTRODUCTION

The Department of Institutional Studies at the University of Cincinnati, in attempting to simulate for planning purposes the shape and structure of the University, must project the resources required to handle increasing numbers of students and greater commitments for research and public service. As the Department surveyed the problem of projecting total University expenses, the need to have some more valid method than mere extrapolation was felt. Inflation, salary increases, changes in the mixes of faculty and students, and services rendered all affect the resources used. Thus an attempt was made to determine a basis for projection independent of these factors.

EXPENSE ANALYSIS TECHNIQUE

A technique was developed which adjusts expenditures to the level of the 1961-62 school year. Answers were supplied to the question, "If U C paid its employees at the same rate as in 1961-62, and if the costs of all other items were the same level as in 1961-62, what would total expenditures be?" In effect the resources U C provided its students were determined assuming salary levels and other cost rates had not changed since 1961-62. Thus measures of real changes in resources provided to students were found (number of faculty, supplies, staff services, etc.).

To do this, two measures of dollar change were used; the average faculty compensation figures as reported to the AAUP by the University, and the Consumer Price Indices as reported by the U.S. Department of Labor for the geographic region encompassing Cincinnati. First of all expenses were divided into two categories: Salaries plus staff benefits as one, and all other expenses as the other category. Expenses for salaries and staff benefits were adjusted to the 1961-62 level by using the AAUP compensation figures according to the following formula:

$$\mathrm{Sal}_j \times \frac{\mathrm{AAUP}_{61}}{\mathrm{AAUP}_j} = \mathrm{Adj\ Sal}_j, j = 1961\text{-}62, \ldots, 1968\text{-}69$$

Sal_j = Salary plus staff benefits in year j

AAUP_{61} = AAUP average compensation for U C in 1961-62

AAUP_j = AAUP average compensation for U C in year j

$\mathrm{Adj\ Sal}_j$ = Adjusted salaries plus staff benefits in year j

Other expenses were adjusted downward using the Consumer Price Indices:

$$\mathrm{Oth}_j \times \frac{\mathrm{CPI}_{61}}{\mathrm{CPI}_j} = \mathrm{Adj\ Oth}_j$$

Oth_j = Other expenses in year j

CPI_{61} = Consumer Price Index for year 1961-62

CPI_j = Consumer Price Index for year j

$\mathrm{Adj\ Oth}_j$ = Adjusted other expenses in year j

The resulting dollar expenditures expressed at 1961-62 levels were then divided by the number of students (expressed in terms of 15 credit hour full-time equivalents) enrolled in the University in the years encompassed by the study. Thus for each of the years 1961-62 through 1968-69 two figures were produced:

1. The 1961-62 level dollars expended for salaries and staff benefits per FTE student. $\left(\frac{\mathrm{Adj\ Sal}_j}{\mathrm{FTE}_j}\right)$ where FTE_j = number of FTE students in year j

2. The 1961-62 level dollars expended for all other expense per FTE student. $\left(\frac{\mathrm{Adj\ Oth}_j}{\mathrm{FTE}_j}\right)$

The sum of the two figures represents the resources made available per student as measured in terms of 1961-62 level expenses.

This method was applied not only to total University expenses for each year, but also to each of the eleven subcategories of expenses which U C (as well as most universities) uses in its financial reports; Departmental Instruction and Research, Instructional Services, Student Services, Libraries, General Expense, Plant Operation and Maintenance, General Administration, Student Aid, Organized Research, Public Service, and Auxiliary Services.

EXPENSE ANALYSIS RESULTS

For U C, the chart below describes the relative size of each of the eleven items.

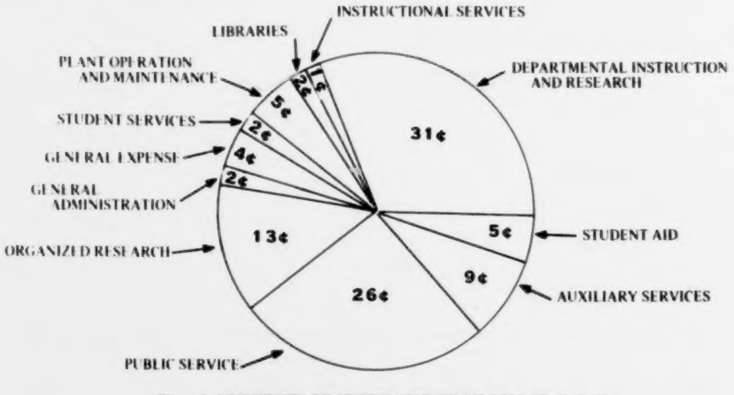


Figure 1. UNIVERSITY OF CINCINNATI EXPENSE DOLLAR, 1968-69

Departmental Instruction and Research, which accounts for about 31 percent of U C's expenses and is the largest of the eleven subcategories, points out one benefit of such analysis (See Figure 2). In the six years studied, Departmental Instruction and Research 1961-62 level dollars spent per FTE varies from a low of $648 in 1961-62 to a high of $746 in

1968-69, and except for one year shows a steady increase. It is interesting to note however that this steady increase is comprised of a **decrease** in salary dollars (in recent years) and a sizeable **increase** in non-salary expenditures. This indicates that per student expenses for supplies, equipment, travel, and the like have increased but that per student salaries have decreased. This implies an increase in the student/faculty ratio and thus an "economy of scale" as far as faculty are concerned.

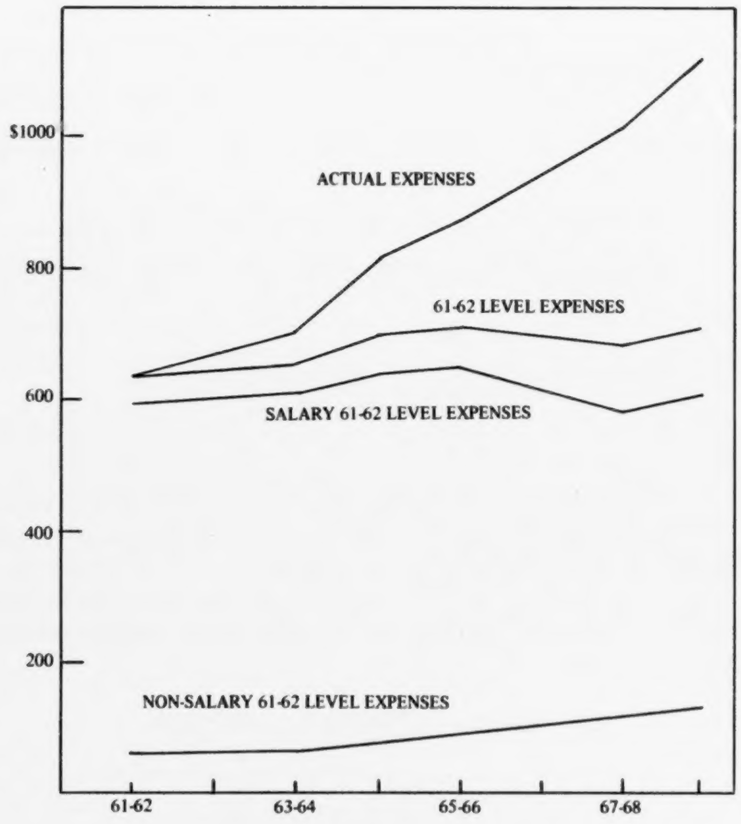


Figure 2. EXPENSES PER FTE STUDENT FOR DEPARTMENTAL INSTRUCTION AND RESEARCH

One can therefore make a case that U C has increased the per student instructional resources made available over the eight-year period while at the same time increasing the student/faculty ratio - in other words, fewer faculty but more supporting items like equipment, laboratory supplies, faculty travel, etc.

In the other categories similar analyses can be done. But rather than lengthen this paper by describing and interpreting the results of each one, a graph of each is shown in (Figure 3). Note the definite trends in all of them except Organized Research and Public Service.

When all of the eleven subcategories are viewed together as one total, U C per student 1961-62 level expenses have increased (See Figure 4). One notes a recent decrease in the salary expenses, but a rather sizeable increase in the non-salary expenses. On a 1961-62 dollar basis the total University expenses per student have increased from $2,035 in 1961-62 to $2,474 in 1968-69. The salary portion of those dollars increased from $1,387 in 1961-62 to a high of $1,566 in 1965-66. From then through 1968-69, the salary expense decreased to $1,453. Non-salary dollars, on the other hand, have shown a steady increase from $668 in 1961-62 to $1,022 in 1968-69. The percentage increase in non-salary dollars far exceeds that of the salary dollars. It appears then that the increase has occurred primarily in non-salaried expenses. The number of faculty, staff, and other salaried personnel per student has not changed very much.

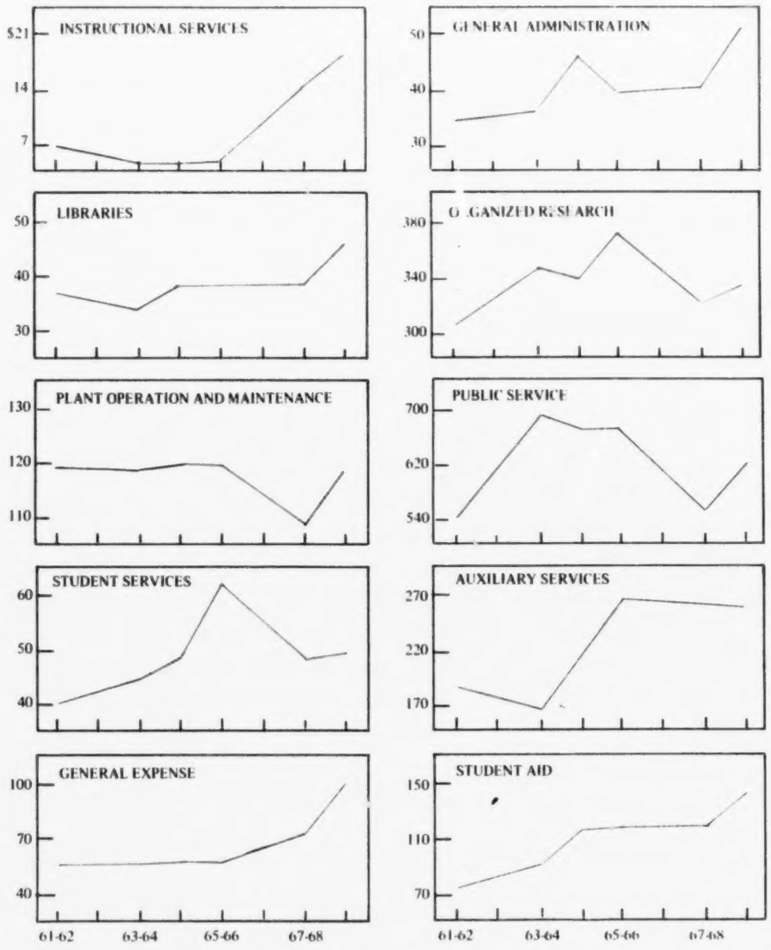


Figure 3. EXPENSES PER FTE STUDENT EXPRESSED IN 61-62 LEVEL DOLLARS

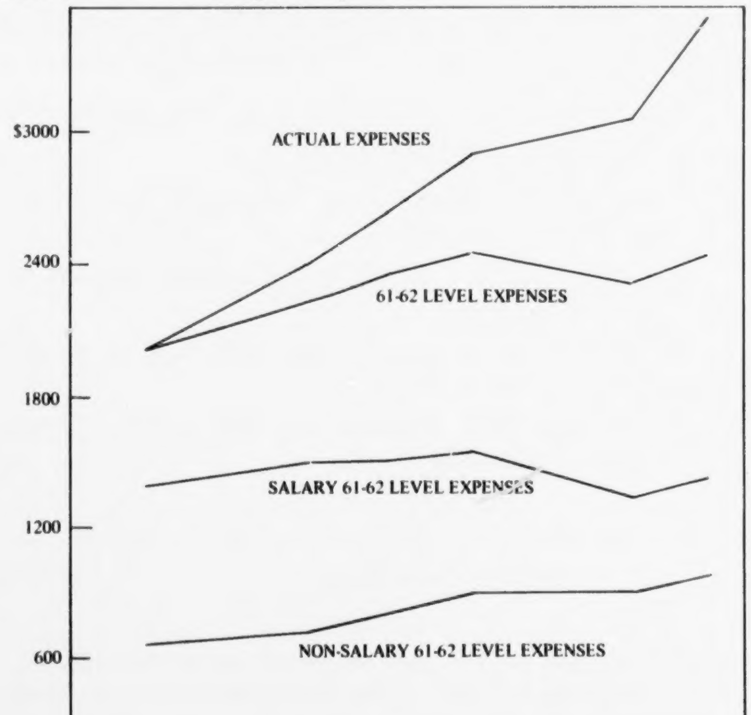


Figure 4. EXPENSES PER FTE STUDENT TOTAL UNIVERSITY

In summary one would conclude that expenses have increased, not only absolutely, but perhaps more significantly on a per student adjusted dollar basis. In effect this is evidence that the hypothesis of "economy of scale" is a false one. Even though our student body has greatly expanded since 1961-62, our expense per student, discounting the effects of time, has increased. Perhaps this overall increase in absolute expense per student is reflective of U C's successful efforts at improving and upgrading the quality of its education.

EXPENSE PROJECTIONS

Using the data developed in the expense analysis as a guide, one can project future expenses. The effect of changes in any or all of five factors can be estimated: Average salary level, inflation, student enrollment, salary resources per student, and other (non-salary) resources per student. As indicators of these five items, the method uses the AAUP average compensation figure, the Consumer Price Index, the number of full-time equivalent students, the adjusted salary expenses per FTE, and the adjusted other expenses per FTE. Total University expenses, as well as any one or combination of the eleven fiscal subcategories can be projected using the following equation:

$$\text{Tot}_{ij} = \text{FTE}_j \left(\frac{\text{Adj Sal}}{\text{FTE}}\right)_{ij} \text{x} \frac{\text{AAUP}_j}{\text{AAUP}_{61}} + \left(\frac{\text{Adj Oth}}{\text{FTE}}\right)_{ij} \text{x} \frac{\text{CPI}_j}{\text{CPI}_{61}}$$

where Tot_{ij} = expenses in year j for fiscal category i

$\left(\frac{\text{Adj Sal}}{\text{FTE}}\right)_{ij}$ = adjusted salary expenses per FTE in year j (salary resources) for fiscal category i

$\left(\frac{\text{Adj Oth}}{\text{FTE}}\right)_{ij}$ = adjusted other expenses per FTE in year j (other resources) for fiscal category i

j = 1969-70, . . .,

To illustrate one use of such formula, consider this example. Assume that the University of Cincinnati wants an estimate of total expenses in 1974-75 under the assumptions that:

1. AAUP average compensation will be $20,000 ($8,576 in 1961-62 – $13,654 in 1968-69).
2. Consumer Price Index will be 140 (103.3 in 1961-62 – 121.0 in 1968-69).
3. There will be 30,000 FTE students (21,741 in 1968-69).
4. Adjusted salary expenses per FTE will be $1,400 ($1,453 in 1968-69).
5. Adjusted other expenses per FTE will be $1,000 ($1,022 in 1968-69).

$$\text{Tot}_{74-75} = 30{,}000 \left[1400 \text{ x} \frac{20{,}000}{8576} + 1000 \text{ x } \frac{140}{103.3}\right] = \$138{,}600{,}000$$

(1968-69 expenses = $76,341,679)

Another use for this kind of projection is the following. Many schools tend to think of budgeting and planning in terms of increases over the current year's expenses (PPBS not withstanding). Thus, if U C wants an estimate of future expenses in terms of percentage changes in current (1968-69) figures, the formula can be modified as follows:

$$\text{Tot}_{ij} = \text{FTE}_{68} \text{ x S} \left(\frac{\text{Adj Sal}}{\text{FTE}}\right)_{68} \text{x F x} \frac{\text{AAUP}_{68} \text{ x M}}{\text{AAUP}_{61}} + \left(\frac{\text{Adj Oth}}{\text{FTE}}\right)_{68} \text{x O x} \frac{\text{CPI}_{68} \text{ x C}}{\text{CPI}_{61}}$$

where $\text{S} = \text{FTE}_j/\text{FTE}_{68}$

$$\text{F} = \left(\frac{\text{Adj Sal}}{\text{FTE}}\right)_j \Big/ \left(\frac{\text{Adj Sal}}{\text{FTE}}\right)_{68}$$

$$\text{M} = \text{AAUP}_j \Big/ \text{AAUP}_{68}$$

$$\text{O} = \left(\frac{\text{Adj Oth}}{\text{FTE}}\right)_j \Big/ \left(\frac{\text{Adj Oth}}{\text{FTE}}\right)_{68}$$

$$\text{C} = \text{CPI}_j \Big/ \text{CPI}_{68}$$

Consider then these assumptions:

1) Twenty percent increase in FTE students (S = 1.20),

2) ten percent decrease in per student support levels (F = 0.90 and 0 = 0.90),

3) ten percent increase in salaries (M = 1.10), and

4) five percent increase in Consumer Price Index (C = 1.05).

$$\text{Total expenses} = (21741)(1.20) \quad (1453)(0.90)\frac{(13654)}{(8576)} \ (1.10) + (1022)(0.90)\frac{(121.0)}{(103.3)} \ (1.05) = \$95{,}229{,}960$$

Using the same formula, one could answer the question "What increase in salaries can be planned assuming a total budget of $100,000,000, an increase in the CPI of 8 percent, a 30 percent increase in FTE students, and the same level of per student support?" Solving for M (the salary multiplier) one gets:

$$\text{M} = \frac{\text{Tot}_{ij} - \text{FTE}_{68} \text{ x S x} \left(\frac{\text{Adj Oth}}{\text{FTE}}\right)_{68} \text{x 0 x} \frac{\text{CPI}_{68} \text{ x C}}{\text{CPI}_{61}}}{\text{FTE}_{68} \text{ x S x} \left(\frac{\text{Adj Sal}}{\text{FTE}}\right)_{68} \text{x F x } \frac{\text{AAUP}_{68}}{\text{AAUP}_{61}}} = \frac{100{,}000{,}000 - \frac{(21{,}741)(1.30)(1022)(1.00)\ (121.0)(1.08)}{(103.3)}}{(21{,}741)(1.30)(1{,}453)(1.00)\frac{(13{,}654)}{8{,}576}}$$

$$\text{M} = 0.96$$

Thus salaries must be only 96 percent of their current level. A **4 percent decrease** in salaries is called for.

One can also answer inquiries which are concerned with the continuation of past trends. We have programmed for computer runs the wherewithal to project the effects of up to three kinds of changes in each of the five variables. Exponential changes (constant percentage per year), linear changes (constant dollars per year), and logarithmic changes (decreasing dollars per year) can all be handled and projections of expenses made through 1988-89. (This cutoff year is arbitrary.) The formulas used are in the appendix. For purposes of illustration, six such simulations are reflected in (Figure 5).

Run A No change in support levels and CPI, and 4 percent first year and then logarithmic increases in students and salaries.

Run B No change in support levels and CPI, and 2 percent first year and then linear increases in students and salaries.

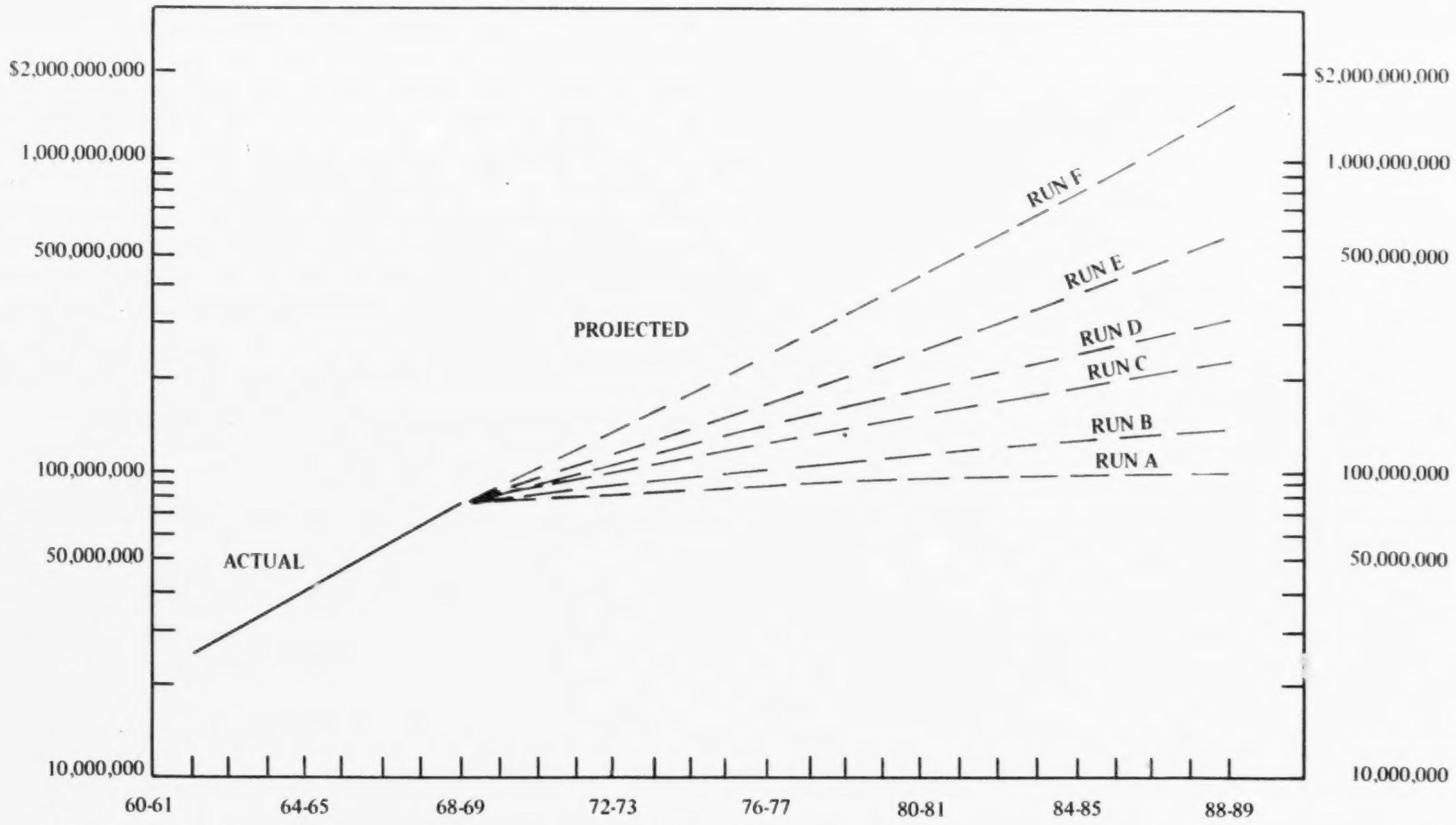


Figure 5. TOTAL EXPENSES – UNIVERSITY OF CINCINNATI SHOWING RESULTS OF SIX SIMULATIONS INVOLVING CHANGES IN THE FIVE PARAMETERS

Run C No change in support levels, 2 percent first year and then linear increase in CPI, and 4 percent first year and then linear increase in students and salaries.

Run D No change in support levels, 2 percent per year increase in CPI, and 4 percent per year increase in students and salaries.

Run E No change in support levels, 2 percent per year increase in CPI, 6 percent per year increase in students, and 5 percent per year increase in salaries.

Run F Two percent first year and then linear increases in both support levels, 3 percent per year increase in CPI, and 7 percent per year increase in students and salaries.

Of interest in Run F are the resulting variable values for the year 1988-89. $2,002 / FTE adjusted salary ($1,453 in 1968-69), $1,456/FTE adjusted other ($1,022 in 1968-69), 84,130 FTE students (21,741 in 1968-69) $52,836 average AAUP compensation ($13,654 in 1968-69), and 218.5 CPI (121.0 in 1968-69).

COMMENTARY ON THE REDUCTION METHOD

In most circles the standard measure of dollar value changes is the Consumer Price Index computed monthly by the U.S. Department of Labor. The increase in the level of salaries at the University had far exceeded the Consumer Price Index relative increases. For example, while the CPI experienced an average 1.9 percent annual increase since 1961-62, the AAUP average compensation figure for U C showed a 6.6 percent average annual increase (both as measured by a least-squares exponential fit - (See Figures 6 and 7). Thus, it did not seem realistic to apply the CPI to any salary dollars. For this reason, all expenses were separated into two parts, salary plus staff benefits, and all other expenses. The AAUP increases were applied to the former, and the CPI to the latter. (It must be emphasized that this study did not measure the 1961-62 "buying power" of dollars expended, but rather attempted to compare the resources made available to students.)

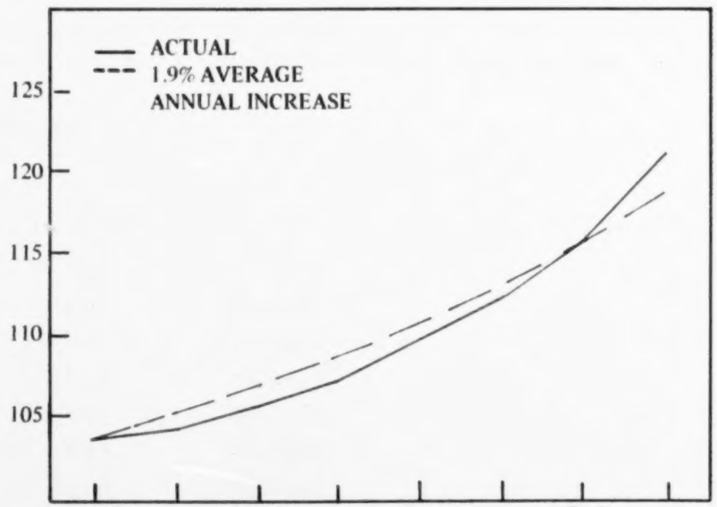


Figure 6. CONSUMER PRICE INDEX GREATER CINCINNATI AREA

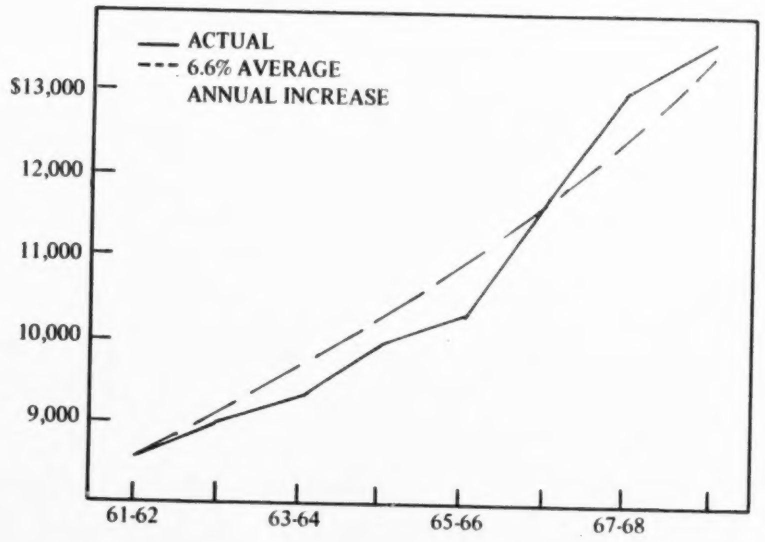


Figure 7. AAUP AVERAGE TOTAL COMPENSATION UNIVERSITY OF CINCINNATI

Criticisms to those about AAUP data can be made against the use of the Consumer Price Index to measure the inflationary effect of the non-salary University expenses. The Department of Labor publishes a number of indices relating to price changes - wholesale price index, durable goods index, and the like. Because of the popularity of the Consumer Price Index and without any more professional guidance, we decided to use it as the best measure.

OTHER COMMENTS

In any per student resource measurements, the manner of counting students must be specified. Full-time, part-time, day, evening, weighted by level and the like are all possible indices. For two reasons, full-time equivalent student counts were used. Most schools use it as the best overall index and data were available. Of some interest is the fact that U C has experienced an average annual growth of 7.2 percent in FTE students since 1961-62 (again as measured by a least-squares exponential fit).

One problem encountered in the study involved the number of past years. Of the eight years spanned from 1961-62 to 1968-69, only six were used. The year 1962-63 was deleted because financial reports were not available, and 1966-67 was not used because it was only a ten-month year because of a fiscal year change. Statistically, therefore, the base does not represent a very solid base for projecting. But because the results appear useful and realistic, we do feel justified in using them.

Another problem encountered was the non-comparability of financial reports from year to year. Changes in the Chart of Accounts and in accounting policies forced the expenditure of considerable man-hours in converting published reports to common definitions. The author received considerable help from U C Business Officers at this juncture.

APPENDIX

Projection Formulae for Trend Continuations

A. Exponential (same percentage each year)

$$V_j = V_{68} \left(1 + \frac{\Delta V}{100}\right)^{j-68}, j = 69, \ldots$$

V_j = Value of variable in year j

ΔV = Percentage increase

B. Linear (same amount each year)

$$V_j = V_{68} \left[1 + \frac{(j-68)\,\Delta V}{100}\right]$$

ΔV = Percentage change in **first** year

C. Logarithmic (decreasing amount per year)

$$V_j = V_{68} \left[1 + \frac{\Delta V \log_2 (j-67)}{100}\right]$$

ΔV = Percentage change in first year

NOTE: Base 2 logarithms were used. The author recommends for future use logarithms to base 1.5, because the leveling off in the value of V_j is less immediate than for base 2.

OTHER DATA ITEMS

	CPI (1)	AAUP Average Compensation	FTE Students
1961-62	103.3	$ 8,576	12,962
1962-63	104.4	9,182	13,685
1963-64	105.7	9,294	14,686
1964-65	107.4	9,948	15,313
1965-66	109.5	10,342	15.842
1966-67	112.3	11,527	17,813
1967-68	116.0	13,096	20,327
1968-69	121.0	13,654	21,741

(1) CPI as published by U. S. Department of Labor for Greater Cincinnati Region. Figure cited is January Level.

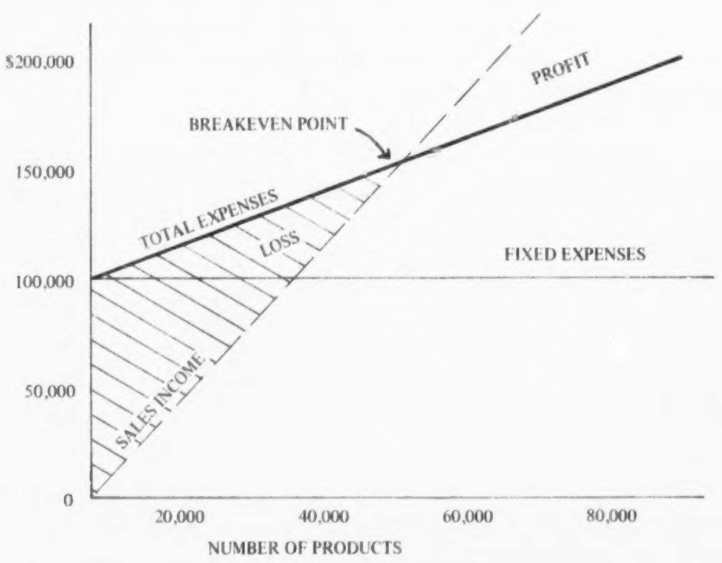
THE USE OF BREAKEVEN ANALYSIS IN DEVELOPING AN OPTIMUM INSTITUTIONAL SIZE

Robert J. Parden
University of Santa Clara

Breakeven analysis applied to the budget of colleges and universities can help the decision makers evaluate the effect of various alternates. The technique was developed to assist in the analysis of manufacturing enterprises to determine the effect, on profit, of different levels of production and sales. Profit is affected, because, as the activity level increases, fixed expenses are absorbed by a greater number of units manufactured and sold. The cost of manufacturing each item therefore, decreases, and the profit for each item and the total profit increases. That point at which costs and income are equal is the "breakeven" point. This relationship is portrayed in Figure 1. The entire premise of mass production is the achievement of higher levels of activity to reduce the unit cost of each item. Should not this same premise hold true for institutions of higher learning? What is the nature of the economies to be realized as enrollment increases? Where should growth stop? What is an optimum institutional size?

Figure 1

A BREAKEVEN CHART FOR A MANUFACTURING FIRM



Legend: The fixed expense at $100,000 is represented by a horizontal line.

Variable expense of $1 per unit is represented as an addition to fixed expense adding an additional dollar of expense for each unit produced.

Sales income increases at the rate of $3 for each unit sold.

Until total expenses are absorbed, the firm operates at a loss, passing the breakeven point it enters the profit range.

To pursue this analysis, it is necessary to identify how each income and expense item will vary with changes in enrollment. Those fixed expenses which do not vary directly with changes in level of enrollment will include such items as the expenses of the president's office, fire insurance on buildings, the cost of mowing lawns. They will, of course, be affected if the enrollment changes are significant, and the character of the institution is basically changed. Recognition of a change in structure of the institution in contrast to increasing the utilization of the present structure is an integral part of the analysis. The major expense which varies directly with an enrollment increase is classroom instruction. Increases in enrollment of as few as fifteen students will require another faculty member if a specific faculty-student ratio is to be maintained.

Income, likewise, is affected by changes in the enrollment level. Higher enrollments mean additional tuition income for the private school, increased per-student appropriations for the public institution. The fixed income of most institutions is the income from endowment, which changes with gifts, not with changes in enrollment. How does all of this relate to the breakeven chart of the manufacturing firm shown in Figure 1. The college or university attempts to reach and stay at or slightly above the breakeven point. If its income exceeds its expenses it expands its services – takes in more students, or strengthens its library. With these various combinations of income and expense elements, its breakeven point shifts. How it shifts is information which will assist in the decisions concerning the allocation of resources, and their effect in both the short and the long run.

A bias in this paper will probably be revealed in the author's assumption that the central purpose of the university is instruction – the quality of the faculty it attracts, the amount of time they can devote to students and other activities. For a faculty man must juggle many pins as he attempts to balance his responsibilities to the institution, the students, his career, his discipline, and his family. As a consequence, the author classifies instruction as a variable expense, related directly to the output of the institution. He therefore places all of the other activities in the category of overhead – supportive, but only indirectly related to output. This assumption will, of necessity, be questioned by those who feel that the environment, not the activity, is increasingly the name of the game.

To apply breakeven analysis to a college or university, it is first necessary to classify all income and expense by their variability in respect to changes in enrollment. This is most easily accomplished by plotting historical changes in each category as a function of changes in enrollment. Figure 2 includes data which will be used to illustrate how this procedure is accomplished. Nedrap University is a private college which has had a steady increase in enrollment. It is now concerned with the effect of further enrollment increases on its financial picture.

Figure 2

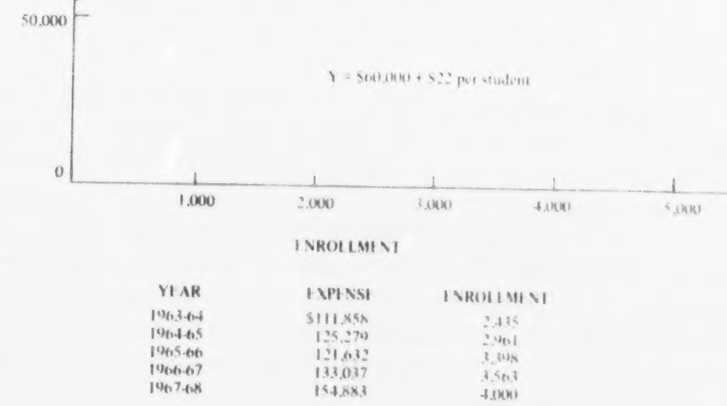
NEDRAP UNIVERSITY
INCOME AND EXPENSES
FIVE YEARS 1963 - 1968

	1963-64	1964-65	1965-66	1966-67	1967-68
FTE ENROLLMENT	2435	2961	3398	3563	4000
Income					
Tuition	$2,399,067	$3,097,548	$3,555,120	$4,280,755	$4,923,852
Endowment	576,780	486,398	479,393	487,916	439,951
General & Dept.	103,032	77,271	189,264	104,734	174,744
Gift	290,376	559,563	370,105	490,258	443,765
Organized Activity	52,311	68,198	67,102	147,575	175,373
Total Income	$3,421,566	$4,288,978	$4,660,984	$5,511,238	$6,157,685
Expenses					
Instruction	$1,793,545	$2,098,659	$2,368,759	$2,633,030	$2,912,911
General Admin.	157,562	196,375	204,195	239,948	275,060
General Instit.	283,659	423,992	459,909	487,363	588,710
Public Service	84,076	60,593	83,444	92,853	136,397
Student Services	245,156	297,967	345,678	435,949	412,776
Libraries	205,537	280,985	301,662	409,844	417,866
Physical Plant	464,222	638,488	695,295	857,185	858,514
Organized Activity	111,858	125,279	121,632	133,037	154,883
Net Financial Aid	85,145	157,159	201,182	264,839	309,203
Total Expense	$3,430,760	$4,279,497	$4,781,756	$5,554,048	$6,066,320
Balance	$ 9,194	$ 9,481	$(120,772)	$(42,810)	$ 91,365

Figure 3 is the first example of the method by which historical data is resolved into fixed and variable components. It can be seen that this expense – organized student activities – (primarily athletics) follows a semi-variable expense pattern. At zero enrollment, there is an expense of $60,000. This might be the salaries of the coaching staff, who are then able to coach all of the activities undertaken throughout an enrollment increase of two or three thousand students. In addition, there is an expense of $22 for each student enrolled, supplies, equipment, part-time coaches – the additional costs of an expanded program.

NEDRAP UNIVERSITY
ORGANIZED ACTIVITIES

Figure 3



YEAR	EXPENSE	ENROLLMENT
1963-64	$111,858	2,435
1964-65	125,279	2,961
1965-66	121,632	3,398
1966-67	133,037	3,563
1967-68	154,883	4,000

Figure 4 is a more classical pattern for colleges and universities. This example uses the libraries' data. There is no indication of a fixed expense during the last five years. Not only is the total expenditure increasing with enrollment, the rate of expenditure per each student is also increasing. From the library data in Figure 2:

Year	Enrollment	Total for Library	Library expenditure per student enrolled
1963-4	2,435	$205,537	$84
1964-5	2,961	$280,985	$95
1965-6	3,398	$301,662	$89
1966-7	3,563	$409,844	$114
1967-8	4,000	$417,866	$104

It can be seen that the rate of expenditure is increasing as well as the enrollment. Remember that if this expense were fixed at the 1963-4 level of $205,537, the expenditure per student in 1967 with an enrollment of 4,000 would have dropped to $51. This would have been the "economy of scale" enjoyed by the organization that increased its output and absorbed the fixed overhead with a greater number of units. This suggests a reason why colleges and universities do not necessarily improve their financial position through expansion. A new tuition level may be decided upon rather arbitrarily. Then the money now available is assigned to whichever area appears to need it. The library always needs more. Before proceeding let me express that I have nothing against libraries, and wherever I have been engaged, I am as annoyed as the next man when a particular book, or back issues of a highly specialized periodical are not available. It is for this reason that every institution seeks to emulate the Library of Congress for

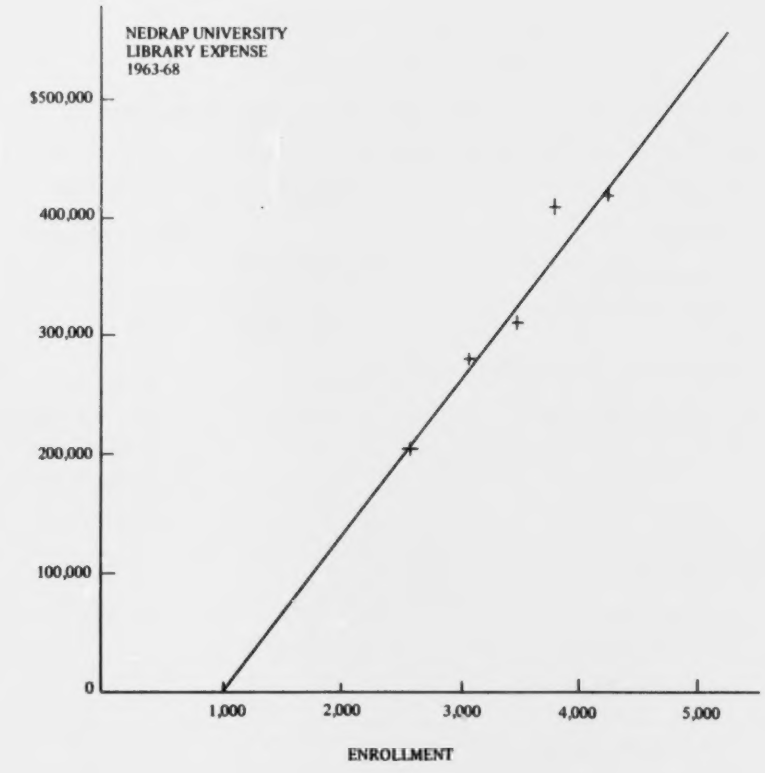


Figure 4

its American holdings and to approach some other leader in its foreign holdings. This is why every president anguishes over the allocation to the library. This is why the allocation process requires additional supporting information to attempt to place each allocation in the total perspective of the institution.

Figure 5 includes the income and expense categories in Figure 2 resolved into their fixed and variable components. As might be expected, endowment and gift income have large fixed components. While they have increased as enrollment increased, it is probably in response to gift campaigns. They would not be expected to increase with enrollment. Only public service and organized activities among the expense categories exhibited any "fixed base" tendency. All of the others increased, not only with enrollment, but also at an increased rate.

Every year the breakeven point in most institutions is reached by raising tuition or increasing appropriations and then spending what money is available. The concern for most private schools is what happens if tuition is increased and enrollment falls off. Or for the public institution, appropriations are not increased yet enrollment increases. Knowing more about the fixed-variable nature of every expense will help in knowing the long range impact of each resource commitment.

How is this historical data used in planning, and in analyses about how large an institution should become if the decision were to be based purely on financial considerations which, of course is only one of several.

Figure 6 is a planning model in which the expenses shown in 2 and 5 are converted to a fixed level for all categories except instruction. Under these conditions the tuition charge could have been $966 instead of $1,200. Admittedly this posture is severe, does not allow for inflation, or for pressures for increased services which are going to occur with increases in enrollment. It does illustrate the amount of additional tuition that must be charged if expenses are allowed to increase at variable rates, that is, as a function of enrollment.

NEDRAP UNIVERSITY
FIXED AND VARIABLE COMPONENTS
OF INCOME AND EXPENSES 1963-68

	Fixed	Variable
INCOME		
Tuition		$1,200
Endowment	$480,000	
General and Dept.	60,000	25
Gift	400,000	
Organized Activities		50
Total Income	$940,000 plus	$1,275 per student
EXPENSE		
Instruction	$125,000	$ 660
General Administration		79
General Institutional		158
Public Service	70,000	4
Student Services		105
Libraries		142
Physical Plant		240
Organized Activities	60,000	22
Net Financial Aid		48
	$255,000 plus	$1,458 per student

Figure 5

Figure 7 retains the fixed expense base and adds a variable component which allows expenses to increase somewhat with enrollment, but not at the same rate. The effect of this difference between a totally fixed expense and a totally variable expense is part of the planning knowledge necessary to realize some of the "economies of scale" available when enrollment is increased. Note that in the calculation of tuition necessary to breakeven shown in Figure 7 the tuition at an enrollment level of 4,000 is $1,213. With an enrollment of 5,000, a lower tuition should be charged – $1,194.

How is this used to determine the optimum size for an institution? As an institution grows in size, it encounters "steps" in its expenditures. If it adds 150 more students, it must add more faculty, more officers, and classrooms if the current ones are fully utilized. If the growth can be accomplished by increasing only variable expenses, greater utilization of the institution takes place, and the unit cost per student decreases. If it is necessary to increase the fixed expenses of the institution, the additional cost of the 150 students may be more than the revenue they generate. At this point an optimum level has been passed, and the decision to grow will have to be considered in terms of the income and expenses necessary to reach the next level at which optimization can be sought. A mini-example of this is with class section sizes. If you seek section sizes of 30 as a balance between instruction cost and student participation, this optimum is passed when you enroll 31 students in the section.

NEDRAP UNIVERSITY
Planning Model No. 1

Non-Instructional Expenses Fixed at the Enrollment Level of 2,435.

INCOME	Fixed	Variable
Tuition		
Endowment	$ 480,000	
Gen. and Dept.	60,000	$ 25
Gift	400,000	
Organized Activities		50
	$ 940,000	$75 per student not including tuition

EXPENSES	Fixed	Variable
Instruction		$870
General Admin.	$ 160,000	
General Instit.	283,000	
Public Service	70,000	
Student Services	245,000	
Libraries	205,000	
Physical Plant	464,000	
Organized Activities	112,000	
Net Financial Aid	85,000	
Total Expense	$1,624,000	$870 per student

Tuition Calculation at 4,000 students:

$940,000 + $75 x 4,000 + T x 4,000 = $1,624,000 + $870 x 4,000
T = $966

Figure 6

If you split the section in two, with 15 in one and 16 in the other, you are then less than optimum in both. A second "optimum step" is not reached until 60 are enrolled in the combined sections. These steps occur in every activity. One dean of students may be able to cope with a thousand students, an assistant is hired and can aid until the three thousand level when a third is needed. Between these levels, there is less than optimum utilization of this single function. Since the optimum is not at the same enrollment level for each activity, the overlap may make it appear that growth of the institution is a continuous function. The development of fixed and variable compenents for each expense will help identify these steps.

Figure 8 utilizes the data of Figure 7 and poses the question: With a current tuition charge of $1,250 and an enrollment of 3,000, and an operating deficit of $285,000, what are the alternatives of size, and/or tuition charges? One alternative is to raise the enrollment to 3,280. If the fixed and variable income and expenses hold the same rates, the institution would breakeven at that enrollment level. If this expansion forces a change in the fixed-variable relationships, then the structure of the institution has changed, utilization of existing plant and staff is no longer possible, and no economy can be realized with this growth.

NEDRAP UNIVERSITY

Planning Model No. 2

Selected Non-Instructional Expenses allowed to increase at rate 50 percent of a totally variable expense.

INCOME	Fixed	Variable
Tuition		To be computed
Endowment	$ 480,000	
Gen. and Dept.	60,000	$ 25
Gift	400,000	
Organized Activities		50
Total Income	$ 940,000	$ 75 per student not including tuition

EXPENSES		
Instruction		$ 870
General Admin.	$ 160,000	7
General Instit.	283,000	40
Public Service	70,000	1
Student Services	245,000	40
Libraries	205,000	26
Physical Plant	464,000	50
Organized Activities	112,000	27
Net Financial Aid	85,000	56
	$1,624,000	$1,117

Tuition Calculation of 4,000 students:

$940,000 + 75 x 4,000 + T x 4,000 = $1,624,000 + $1,117 x 4,000
T = $1,213

Tuition Calculation at 5,000 students:

$940,000 + 75 x 5,000 + T x 5,000 = $1,624,000 + $1,117 x 5,000
T = $1,194

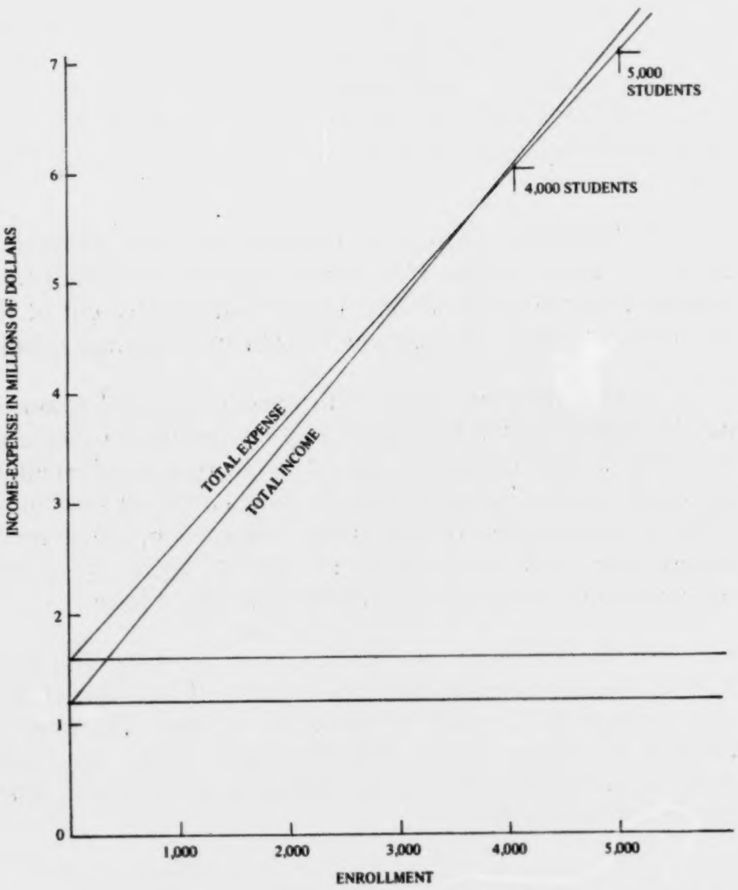
Figure 7

A second alternate, and the one used by most institutions, is to raise the tuition by $95. If the same student characteristics are sought, this analysis may have to be extended further to be certain the scholarship balance is not lost, in which case an even higher tuition may have to be charged.

With this kind of data, the impact of alternates becomes more apparent to the decision maker. If both of the alternates in Figure 8 are selected, $95 in tuition, and to increase enrollment by 280, $328,000 additional funds become available. Providing that the fixed-variable ratios do not change, this will allow for an average increase of 6 percent in all expenses, about what the current inflation rate requires.

Figure 9 compares the profiles of a high fixed-expense institution with a low fixed-expense institution. Both breakeven at 2,000 students. Each has a $1,000,000 fixed income and a tuition charge of $750.00 at the 2,000 enrollment level.

If the high fixed expenses represents primarily non-instructional overhead, then only $500.00 per student is available for instruction requiring a faculty-student ratio of perhaps one to thirty. Economies of scale are possible because the overhead could be absorbed by greater numbers of



The effect of moving from 4,000 to 5,000 students if fixed-variable relationship can be maintained.

Figure 8

students. To move to an enrollment of 2,500, with the same expense rate, a tuition of only $700.00 could be charged (rather than $750). In the low fixed-expense situation, $1,000 is free for variable expense, and a faculty student ratio of 15 to 1 is possible. There would be no advantage in expansion.

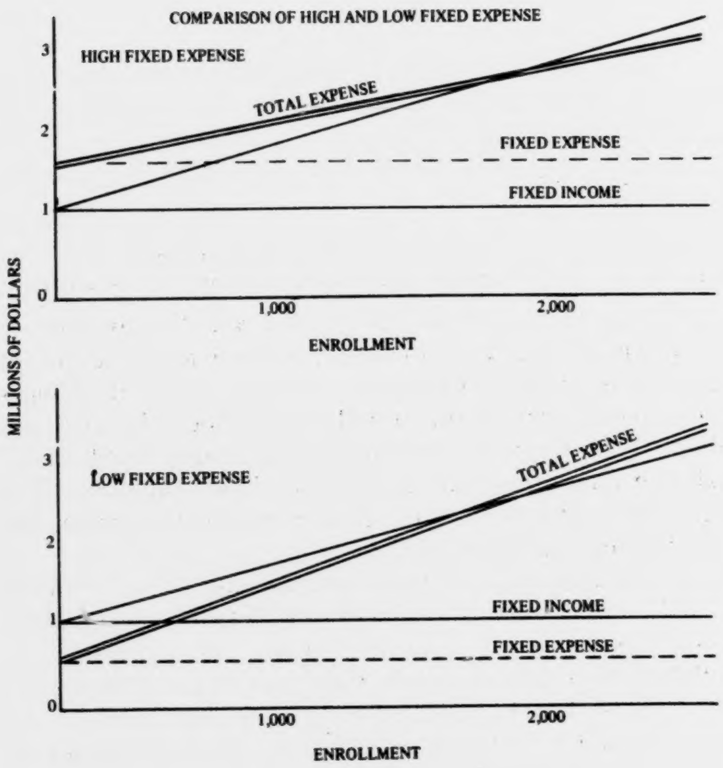


Figure 9

To apply this to an institution, the character of each account must be studied. Figure 10 is an analysis of the behavior of General Institutional expense and Instruction expense from the data in Figure 2. The trendlines produced in Figures 3 and 4 are based on five year trends. Figure 10 compares incremental changes in enrollment and expense from year to year. These are only the variable portions of the expense. The fixed portion does not show in the incremental analysis. Consequently the total unit expense and the incremental unit expense will not be the same.

GENERAL INSTITUTIONAL EXPENSE

Year	Enrollment	Increased Enrollment from previous year	General Instit. Expense year	Increased Expense from previous year	Increased Expense per increased enrollment per student
63-64	2,435		$283,659		
64-65	2,961	525	$423,992	$140,333	$267
65-66	3,398	437	$459,909	$ 35,917	$ 82
66-67	3,563	165	$487,363	$ 27,454	$166
67-68	4,000	435	$588,710	$101,347	$232

INSTRUCTION EXPENSE

Year	Increased Enrollment from previous year	Instruction Expense	Increased Expense from previous year	Increased Expense per increased student
63-64		$1,793,545		
64-65	525	$2,098,659	$305,114	$ 581
65-66	437	$2,368,759	$270,100	$ 618
66-67	165	$2,633,030	$264,271	$1,600
67-68	435	$2,912,911	$279,881	$ 643

It can be seen that general institutional expense was not increased.

SUMMARY

1. The value of breakeven analysis is to recognize the impact on allocation decisions of the fixed and variable characteristics of income and expense categories.

2. The breakeven point for an institution can be computed from:

$$\text{Breakeven point (enrollment)} = \frac{\text{Total fixed expense} - \text{fixed income}}{\text{Income (per student)} - \text{expense (per student)}}$$

3. If expenses are increasing at a rate directly variable with enrollment increases, there can be no financial advantage to enrollment growth. If expenses are fixed relative to changes in enrollment, enrollment growth will reduce the cost per student. If expenses are semi-variable, i.e., partly fixed, partly variable, economies will occur with enrollment increases. The greater the tendency towards fixed expenses, the greater the economies that will be realized.

4. An approach to fiscal optimization of institutional size (there are other equally important non-financial considerations) is to recognize when an expansion in enrollment requires a change in the structure (plant and staff) of the institution in contrast to greater utilization of the existing structure. When the change in structure causes an increase in the fixed expense, or changes the rate of expenditure, then, an optimization point is being reached.

5. Incremental cost analyses are helpful in identifying the effect of enrollment increases. Because they do not include any fixed portions of the expense, they are not the same as an average unit expense calculation. A trend line drawn from previous history will prevent "locking in" of a "one time" expense.

6. Breakeven analysis underscores the need to analyze all unit expense figures. An average expense of $28.50 for a student credit hour must be coupled with a statement of the enrollment level or the class size for which the average is valid.

7. Optimization of an institution's financial resources can be approximated by successive trial enrollment increases. If the unit cost increases – forced by expansion of facilities, increased scholarships to attract the same caliber of student, or other changes in the fixed-variable relationship, a new set of assumptions will be needed to see if there is a new optimization opportunity at a higher enrollment level.

8. The advantage of fixed expenses reducing unit costs as enrollment increases becomes negative if enrollment falls off, perhaps as a result of increased tuition. The drop in enrollment means fewer students must share the fixed expense, increasing the costs per student at the very time when the reverse is desirable.

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EVALUATION

EVALUATION IN HIGHER EDUCATION

Alexander W. Astin
American Council on Education

Although the role of the institutional researcher has been variously defined in different colleges and universities, my own view of the ideal role for the Director of Institutional Research is that of the "evaluator". Although evaluation has traditionally been defined in many different ways, the most useful form of evaluation produces information which can be useful in decision making. Thus, evaluative studies are most likely to produce useful information if they are based on an understanding of the nature of the educational decision-making process.

Decision Making in Higher Education

The need for rendering an educational decision in higher education implies the existence of two fundamental conditions: Some recognized educational **objective** or set of objectives and at least two alternative **means** for accomplishing these objectives. Educational decisions involve a choice among the available alternative means by which the desired objectives may be achieved. Consequently, every administrative decision is predicated on a belief in the existence of a causal relationship between some educational object and the particular means selected to achieve that objective.

Although these assumptions are often not made explicit, they underlie every administrative decision. Take, for example, the question of curricular requirements. If several alternative sets of requirements have been proposed, a decision must be made about which one to use. If the faculty chooses set A over sets B or C, its choice is obviously not a random one (although some members of the faculty may regard it as such). The decision to use set A is based on the assumption that, with respect to some desired student outcome, the consequences of adopting set A will be superior to the consequences of adopting either of the other two sets of curricular requirements.

Rational educational decisions are rendered by consulting various kinds of information assumed to be relevant to both the desired outcomes and to the various means under consideration by the decision maker. Note that the notion of cause and effect involves at least three kinds of information: Student **inputs** (the talents and achievement level of the student when he enters college), student **outputs** (his level of achievement or knowledge after exposed to the institution), and **environmental experiences** (the nature of the institution's educational program). The major goal of evaluation is to provide the administrator with relevant information about the inputs, outputs, and environmental attributes of his institution. Clearly, the most useful mode of presentation of such information is to show the administrator how his particular educational practices affect the student outputs that are of interest to him, and also how various alternative educational practices under consideration might produce different types of outcomes. If the institutional researcher does not provide such causal information but simply presents the administrator with descriptive data on, say, the student input, then the administrator is forced to supply his own causal inferences if the information is to be of value in decision making. In other words, it is not sufficient simply to provide administrators with descriptive information as requested; the institutional researcher has a major responsibility to relate such information to the decision problems under consideration by attempting to detect causal relationships between alternative means and educational outcomes.

The collection of student input and student output information is a task that can be assumed by most institutional researchers. There are, of course, many logistical and political problems within the institution that must be dealt with if a systematic data base measuring change in the students over time is to be developed and maintained. Since there are a variety of student outcomes which are relevant to the goals of institutions, and since faculty, administrators, and students may assign different values to these outcomes, it is important for the institutional researcher to develop a data base which measures changes in a variety of student characteristics. At a minimum, he would want to include data on changes in the student's cognitive development, educational aspirations, and career plans. Ideally, he would also want to include information on changes in the student's self-concept, attitudes, values, and behavior.

Incorporation of data on the student's environment in general represents a more formidable task than collection of student input and output data. At a minimum, the institutional researcher would want to record all specific educational or environmental events encountered by each student. These would include such things as his curriculum, the professors who taught his courses, membership in organizations, participation in special educational programs, financial aid received, and place of residence while at college. Of particular importance is information on special experimental programs or other types of innovative educational interventions. Knowledge of which students participated in such programs is essential to any attempt to assess the impact of such programs in comparison with the traditional programs.

Studies of the impact of more global environmental attributes of the institution (its size, for example) are normally impossible to carry out at a single institution. In order to study the impact of such attributes on the student's development, it is necessary to study simultaneously **several** institutions which vary with respect to the attribute under investigation. Under these circumstances, it would be important for the institutional researcher to attempt to engage in collaborative research with several other institutions of varying character, so that comparable input and output data on students attending the different institutions can be collected and compared. Again, it is important here to focus on those institutional attributes which are likely to be central to the administrator's decision problems.

The extent to which the results of such evaluative research can be regarded as relevant to any decision problem is dependent on a number of considerations, including the appropriateness of the particular environmental characteristics and student outputs that are selected for study, as well as the methodology used to collect and analyze the data. The confidence that the administrator can place in the causal interpretations of the resulting findings is dependent on the extent to which the institutional researcher has been able to rule out plausible rival interpretations of the data in his analysis.

In summary, I have argued that the appropriate role of the institutional researcher is to produce information which can be used in administrative decisions regarding the adoption of new educational policies or practices or the modification of the existing policies and practices. Since such decisions are ultimately based on assumptions of causal relationships between particular educational practices and the desired ends or objectives of the educational program, the institutional researcher can be most relevant to decision making if his research is directly concerned with these causal relationships. Since such information requires data on student inputs and student outputs as well as information on the environmental attributes of the institution, institutional researchers need to be familiar both with techniques of data collection and data processing and with methods of experimental design and analysis.

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EVALUATIONS OF INNOVATIONS IN EDUCATION

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I write on this subject with great trepidation, for innovation suggests change, and change invites controversy. If you do nothing new, you seldom make enemies. But if you try something new and different, it challenges the existing structure, so beware! I cannot help recalling that old scientific law, "To every action there is an equal and contrary reaction". I have labeled this reaction the "do nothing syndrome".

On the other hand, if you dwell among certain kinds of people, you must assume change will take place whether it should or not. They are victims of the "do anything syndrome". In this environment, one may find it important to produce evidence why some changes should not take place, lest something essential in the existing education structure be destroyed.

Those of us who do research into the problems of higher education must steer clear of both of the syndromes just described. We must learn to conduct sound evaluation of the innovations that are proposed. Innovations should be encouraged, but they also need to be examined critically. Unless they are so examined, the ever-present weaknesses of each new proposal cannot be discovered and repaired. Many potentially good ideas are likely to be eventually cast aside because of fatal weaknesses detected too late.

Several standards apply to all such evaluations. These rules apply to **all** evaluations, not just those concerned with innovations. The first is that the success of any new idea must be measured in terms of the stated objectives. It seems to me that the first question we should ask about any costly or significant innovation is, what possible important outcomes might this experiment yield? What are the objectives?

When this standard has been satisfactorily satisfied, we have another: By what criteria can we determine if, and to what extent, the defined objectives have been met?[1] Without a sound method of comparing **what is** to **what should be**, we can have no idea whether or not an innovation is successful. The evidence may sometimes be qualitative, but it had often better be quantitative. It is difficult to describe outcomes solely in abstract terms. If learning is "better" under a given method, the word "better" needs to be defined in terms of actual quantitative measures. Concrete illustrations can do a great deal to clarify the meaning of abstract terms.

A third point to keep in mind when an innovation is evaluated is that it may have significant by-products and these by-products may by nature be either good or bad. A good illustration comes to mind from the field of chemical research. When DDT was first developed, its success in destroying pests and harmful fungi was sensational. However, it would have been better if we had all paid more attention to the by-products DDT: Destruction of useful insects, birds, and marine life. Those who launch innovations in education must be aware that there may be many by-products or side effects of an experiment. These effects need to be assessed. The third standard, then, concerns the evaluation of by-products.

A fourth standard is relevant if the innovation is expected to replace something else. We must then ask if something essential in the existing practice is to be replaced. Years ago, an innovator compared learning in a traditional classroom with that in a classroom in which sound pictures were used as the teaching process. To his surprise, learning in the traditional classroom came out far ahead. What was the reason? Simply, that in using the film he had removed opportunity for feedback and classroom discussion. He had thrown out the baby with the bathwater, so to speak. He then decided to do what he should have done in the first place: Use the film simply to enrich the learning.

A fifth and final standard is that the innovation must eventually be made practical. It is too bad to bring up the matter of cost in an experimental program. But **someone** will eventually bring up the subject of cost, and probably other matters of practicality. Many higher education innovations are Federally funded, including some that are very expensive. The question is, can we afford to keep them once the "outside" funding has ceased? It then becomes necessary to weigh the anticipated gains against the cost.

Because of the practical considerations of possible bias, an innovation should be evaluated by someone who has no prior prejudice for or against the innovation. This means that whoever initiates an experiment is often NOT the person who should evaluate it.

Keeping in mind these five basic standards, let us turn to a specific type of innovation, the often tried pass-fail grading of college achievement. I choose this type of experiment because of its widespread adoption, and because it is difficult to evaluate. In higher education, if you have not tried pass-fail grading, and possibly discarded it, you are behind the times. Surely we all hold strong opinions concerning this controversial practice, and we are ready to talk about them at the drop of a hat. Can we also examine them objectively? Let us put pass-fail to the test that has just been described.

According to a Phi Beta Kappa report, the pass-fail proponents expect that its adoption will achieve the following objectives: 1) Permit the student to learn without pressure or emotional strain, 2) remove the repression or inhibition of a grading system, 3) give students the opportunity to pursue courses in academically unfamiliar areas without fear of a poor grade, and 4) encourage students to display greater motivation and intellectual curiosity than under traditional programs.[2]

This statement, if it is complete, fulfills the first basic standard of sound evaluation: Listing of anticipated objectives. Let us now turn to the second objective: By what criteria can we determine how well the objectives are met? How does one determine whether or not students are learning without pressure or emotional strain? Or can we **assume** that this is true? To my knowledge there are no objective findings bearing on this question.

In like manner, let us examine the second aim, "remove the pressure or inhibitions of a grading system." Does this statement imply that pass-fail is **not** a grading system? This question opens up a whole line of variables among pass-fail plans. 1) At what level of achievement is the distinction made between pass and fail? 2) For what kinds of courses, and for how many courses, do students have the pass-fail option? 3) Are pass-fail courses open to all, or only to those having certain achievements? 4) Does the professor in a pass-fail course know who has chosen the pass-fail option? 5) Does the professor, or the registrar, keep the record of the grades in a pass-fail course? 6) Are the students ranked? 7) Do the "pass" credits count toward graduation? A summary of current practices concerning these variables is contained in the Phi Beta Kappa report.[3] The point I wish to make here is that each separate practice needs to be evaluated separately, and that some of the pass-fail experiments are set up in such a way that they cannot be evaluated at all in relation to the stated objectives. Concerning pass-fail objective number two, let me raise this question: Can a pass-fail plan be devised so that it removes the pressures of grading and still be subject to sound evaluation?

A crucial test comes when we examine objective number three. It is not merely a question of, "can students take academically unfamiliar courses without fear of a poor grade," but **do** they take them? **Who** takes them? And, what is the quality of their work? At Stevens Point, some departments designated pass-fail elective courses from the major, and some of these were required courses. This in spite of our adherence to objective three as the most important. We have no record of the quality of work in pass-fail. Further, we have not determined how to tell when a student has "fear of a poor grade."

The College of Letters and Science at Dartmouth College made a three year trial of pass-fail option. Officials there found that only 3 percent of pass-fail courses chosen were courses that were academically unfamiliar.[4] Dartmouth has now greatly limited the pass-fail options.

Concerning objectives 2 and 3, the University of Wisconsin has offered some pass-fail options with provision that the registrar, not the professor who taught the course, knew which students had chosen the pass-fail option. The professor turned in a letter grade for each student. There was a significant tendency for juniors and seniors to earn lower grades in pass-fail courses than they did in other courses, or than junior and seniors generally earned.[5] These are only sample findings concerning objective number three. We need to have the whole picture.

Concerning pass-fail objective number four, how is it possible to determine if students display greater motivation and intellectual curiosity? I do not have the answer. Unless very carefully defined, evaluations based on this objective are likely to be very subjective, such as this one: "Students seem to use the (pass-fail) system less to gamble on a course in which they might otherwise get a mediocre grade than they do to relax a little, and devote more time to their other courses."[6]

Let us turn now to my third standard and ask, "What are the by-products of pass-fail?" I doubt if these have been studied seriously. But we might find clues in the number of times classes are cut, the degree of attention during the class period, the number of reference books checked out, and the amount of time spent in off-campus social activity. Let us consider these possible criteria carefully.

We come to grips with the main problem in standard number four: Will anything essential be lost if we change from traditional grading to pass-fail grading? The answer to this question depends on whether pass-fail grading is adopted piecemeal or whether it is to replace all other grade reports. If only a few pass-fail credits are permitted, the traditional grade reports have not been destroyed; their usefulness may simply be somewhat curtailed. Letter grades have long been used to distinguish different levels of qualities of achievement. They are helpful later on to students because they distinguished better scholarship from poorer scholarship at several levels. They are used to determine fitness for advanced study, and to determine academic strengths and weaknesses as they help determine who should be employed for certain kinds of work. Georgetown University Law School is now trying pass-fail grading, and they have inquired of those who employ Georgetown graduates whether or not pass-fail grading would handicap law school graduates who sought employment with the firm. So far the responses to this inquiry are limited in number. Although 50 percent of the responses indicated outright that pass-fail grades were likely to cause denial of employment, numerous others said that in the absence of relevant law grades they would seek some other evidence of the candidate's competence.[7] We might add parenthetically that they would also seek for, and no doubt employ, candidates who **did** have relevant law grades. The point I wish to make is that if all scholarship is evaluated simply as pass or fail, we would have only the subjectiveness of a few instructors' opinions on which to base employment and scholarship decisions. In this sense, discarding more refined grades in favor of pass-fail grading **would** be like throwing the baby away with the bathwater. At best, all we have done by installing pass-fail is to substitute one subjective system for another.

The literature on this subject is bedecked with suggestions that we should adopt pass-fail grading because many "educators" evaluate and grade so poorly. But this is like saying that we should abolish automobiles because many people have accidents. Might it not be better to teach professors how to evaluate learning fairly and objectively if they do not know how?

The fifth standard is that of practicality. Perhaps if we are practical we will consider where pass-fail grading is most useful and use it there only. The plan seems useful in situations in which all we need is an "accept or reject" decision. When a law candidate takes a bar examination, the test is one of final competence. Further comparisons with others are not needed or expected. Certainly there are many such situations in education, and pass-fail grading has long been used for these occasions.

Let me summarize what I have said so far. I have said that educational innovation is highly important, but that innovations should be examined critically and scientifically. I have proposed five standards by which to evaluate these innovations, and pass-fail grading has been used as an example of an innovation which can be scientifically appraised, point by point. I would like to raise the following questions for your careful consideration.

1. Are the five standards for appraising innovations valid?
2. Are there other standards that should be included?

3. Can pass-fail grading be fairly appraised with the use of these standards?

4. What are the best methods of reducing subjectively stated purposes (such as those for pass-fail grading) to objective measures?

5. How can those who carry out educational innovations be convinced of the need for sound evaluation?

I invite you to consider these and other pertinent questions as you hear other reports on the pass-fail experiment. Especially, I invite you to consider again the matter of what constitutes sound evaluation.

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[1] Bloom, Benjamin, ed., *Taxonomy of Educational Objectives; Handbook I, Cognitive Domain*, McKay, 1954.

[2] Phi Beta Kappa, "Pass-Fail Study Committee Report to the Senate," 6 December, 1969, p.1.

[3] *Ibid.*

[4] Education U.S.A., November 17, 1969. p. 68.

[5] From a University of Wisconsin (Madison) report, "Comments on Second Semester 1967-68 Pass-Fail Grades."

[6] Phi Beta Kappa Report, *Op. Cit.*, p. 6.

[7] Tucci, Anna M. "Experiences of the Placement Office," *Ipsa LoQuitar.* pp. 11+.

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AN EVALUATION OF WITTENBERG'S PASS-FAIL GRADING SYSTEM

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In the last five years Wittenberg University has been involved in two different approaches to limited grading systems. Prior to Wittenberg University's adoption of its present pass-fail grading system, another limited grading system had been in effect for three and a half years. This grading scheme was known as the H-S-F (Honors, Satisfactory, and Fail) system and was instigated for the entering freshmen. All courses taken during the freshman year were graded in the H-S-F manner, and full course credit was obtained for courses in which the student received an Honors or Satisfactory report. No grade point average was computed during the first year. The underlying philosophy of the H-S-F system was one of "cushioning" the freshman's transition from high school and enabling him to study for the sake of learning rather than for the traditional grade of A-B-C-D-F. The consensus of both studies and discussions among faculty, students and administrators conducted during the H-S-F grading program cast serious doubt on the premises on which the system had been founded.

The complaints against H-S-F were loud and diverse. Some argued that high school students were accustomed to A-B-C-D-F grading and the H-S-F system did not ease transition. Instead it increased confusion and made it harder for the student to assume the freedom and responsibility of college. Most of the freshmen students reported they did not feel academic pressure during their first year. However, there were varying interpretations as to how the students utilized their free time. It seemed a consensus among upperclassmen, who served as dormitory advisers, that the freshmen spent most of their time in the student union, in bull sessions, and in the local bars. Also, the registrar reported no discernable drop in attrition in the freshman classes during this period. However, there was some evidence that attrition was somewhat higher during the sophomore year than in years previous to the H-S-F. This indicates that the H-S-F system during the freshman year merely delayed the student's confrontation with the grading realities of academic life. Other problems of transferring credit, awarding scholarships, eligibility for athletics and the draft became evident during this period.

Because of these problems with H-S-F, a faculty committee began investigation during the fall of 1968 into another form of limited grading. In the spring of 1969 the Wittenberg faculty adopted the present pass-fail grading system. Instead of using limited grades only for freshmen, all students now may elect up to nine courses under the pass-fail option during their college career; nine courses represent 25 percent of the total number of courses required for graduation. The pass-fail option may not be exercised more than once per term except in the first term of the freshman year the student may elect up to and including three courses under the pass-fail option. The pass-fail option must be declared at the time of registration, and this decision is final. Only the student and the registrar know which courses the student has elected for the P-F option; the professors still hand in A-B-C-D-F grades for all students. The registrar then converts grades "A" through "D" to a pass and "F" remains an "F". Also, a student may not elect the pass-fail option in courses in his major subject area.

The spring term of 1969 was the first term of the present pass-fail system. A total of 846 courses were designated by the students as pass-fail options. The freshman class took a total of 346 courses on pass-fail. However, since freshmen could take more than one course P-F, only 286 individual freshmen (45 percent of the class) exercised the P-F option. In the sophomore class, 127 individual students (22 percent of the sophomore class) used the P-F option. One hundred seventy-one individual juniors (33 percent of the junior class) used the P-F system, and 202 individual seniors (43 percent of the senior class) exercised the P-F option. A total of 786 individual students or 36.5 percent of the student body exercised the P-F option during this first term.

An analysis of the courses in which the student opted for P-F grading revealed that 84 percent of the courses were institutional requirements.

An overall P-F grade point average during this first term was 2.20. The grade point average for courses taken on a non-pass-fail basis figured out to be 2.97.

A study I performed on a random sample of pass-fail students compared to a random sample of non-pass-fail students was conducted using a number of variables. Care was taken to match the pass-fail with the non-pass-fail students on sex and the type of course taken. The research question which was investigated in this study can be stated in this manner: Do students who exercise the pass-fail option differ in terms of academic achievement and aptitude from students who did not exercise the pass-fail perogative?

The subjects were compared on the following criterion variables: Grades in selected courses, term grade point average, cumulative grade point average, and verbal and math scholastic aptitude test scores. The analysis of variance was used in an A x B factorial design. The two factors analyzed were P-F and non-P-F students and college class (freshmen, sophomore, etc.). The only statistically significant differences between the two groups existed for course grades. The two groups were not significantly different from each other in terms of S.A.T. scores, term or cumulative grade point averages.

In short, this investigation into the first term of the pass-fail system revealed that pass-fail students generally designated institutional requirement courses for the P-F option, and differed significantly from non-pass-fail students only in course performance.

Wittenberg has now completed a total of three terms under the pass-fail option. At this point two trends appear to be developing. First, there has been a gradual increase in the number of courses taken on a pass-fail basis. Second, the average grade point for courses taken on a P-F basis has been declining from a 2.20 the first term of P-F, to a 2.13 in the second, and a 2.04 in the past term. One could certainly draw the conclusion that students are not only achieving at a much lower grade level compared to their traditionally graded classmates, but also they are as a group achieving progressively less well each term the P-F is offered.

The popular departments in which students predominately chose to exercise the P-F option are generally English, religion, languages, math, biology and chemistry.

A number of questions have been raised at Wittenberg concerning the pass-fail system. Students unanimously seem to think the present system is excellent. This position is supported by a black student organization on campus which has championed the pass-fail cause from the point of view of the culturally deprived student's adjustment to a white, middle class institution. Faculty at this point appear to be divided concerning the grading system. Many would like to see the pass-fail abolished and a return to the days when a student had to "work for a grade". Other faculty see positive advantages to the present system and express confidence that the pass-fail system really does achieve its objectives. Some parents have voiced concern about the P-F – by inquiring if this credit would be accepted at another undergraduate or graduate institution. Student personnel workers seem to feel that the pass-fail system allows the student too much free time with which he can get into trouble.

In conclusion, it appears that the same weaknesses and complaints which were apparent in the Honors-Satisfactory-Failure system are reoccurring in the present pass-fail system. The evidence is strong that P-F students do not achieve comparably with non-P-F in the same courses. However, does this mean the P-F system is not good? It could be argued that an evaluation of a pass-fail system should not use as one of its criteria the very thing the P-F was designed to alleviate: Grade motivation. Perhaps new techniques and approaches need to be developed which measure a student's class performance in terms other than the usual A-B-C-D-F criterion.

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THE PASS – FAIL OPTION AT SOUTHERN ILLINOIS UNIVERSITY AT CARBONDALE

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In the early part of the academic year, David E. Christensen, Assistant Dean of the College of Liberal Arts and Sciences began thinking seriously about a pass-fail option for students in the College of LA & S. By February 9, 1968, the LA & S Council passed a proposal to implement a limited pass-fail system for the College of LA & S on a two-year trial basis. The proposal was presented as a method:

a. That would induce some juniors and seniors in the College of LA & S to explore intellectually by taking elective courses outside of their area of specialization. It is assumed that by **not** having to compete with majors on a graded basis, students will be encouraged to take courses in which they may have a real or presumed interest. The net effect of this proposal will be toward the broadening of student's education which is consistent with the goals of the College of Liberal Arts and Sciences.

b. Will provide more flexibility in the instructional program of the College of LA & S. Many professionals in the field of higher education have criticized the highly packaged and structured system of higher education. The system is based on a set of courses that go up a numbered ladder which includes sets of required courses, sets of credit hour units, and rewards in the form of letter grades. In recent years students have decried this rigid system. The pass-fail option with the increased flexibility and the lessening of competition should result in more student satisfaction.

The pass-fail option was to have limitations built into it to insure its adoption & probability of success.

1. The pass-fail option pertains only to students, departments, and courses in the College of LA & S.
2. The pass-fail option will be open to LA & S students with an overall grade point average of 3.25 or higher at the time they register for the option. This minimum G.P.A. was chosen because it was consistent with the minimum G.P.A. required for students wishing to self-advise in the College. This minimum G.P.A. also gives some assurance that marginal students will not use the system as a crutch. This minimum G.P.A. may encourage students to strive for this minimum in order to be able to option courses on a pass-fail basis. Furthermore any pass-fail credits of a student whose grade point average falls below the 3.25 minimum will be counted toward graduation.
3. Students may only apply up to 16 units of pass-fail credit toward graduation.
4. No more than 8 units of pass-fail credit may be applied from any one department.
5. All 300 & 400 level courses taken as pass-fail and passed will be accepted toward the senior hour requirements.
6. Pass-fail credits are applicable for elective courses only. They may not be applied toward any major or minor requirements for a degree from the College of LA & S. There is an exception in that if a student changes his major to one in which he has received "pass" credit, the credit may be counted for hours toward the major if the department concurs.
7. A "pass" grade is construed to be the equivalent of at least a "D" grade in the regular 5 letter grading system.
8. Any pass credit earned will be added to the total number of hours passed but will not be counted in computing the G.P.A.
9. Any fail credit earned will be shown on the students record but has no effect on the G.P.A.
10. Each LA & S. department will decide which of its courses will be offered with the Pass-fail option.
11. A student has up to the fourth week of each term to change his registration from the Pass-fail option or vice-versa. This deadline is the same as for other registration matters.
12. All students taking the Pass-fail option are subject to the same course requirements as regularly enrolled students.

As part of the Pass-fail innovation, evaluation of the innovation was included. The evaluation was to be considered after two years of experimentation. An outside agency such as an ad hoc committee was to be appointed by the Dean to gather evidence in order to make recommendations concerning its continuation with or without modification or its abandonment. For purposes of evaluation, each instruction was asked to submit two grades for each Pass-fail option student, his Pass or Fail grade along with a regular letter grade. The Registrar only recorded the P/F grade.

The Office of Institutional Research has been given the task of evaluating this program. The University Council has extended the Pass-fail program through the Fall 1970 quarter in order to permit the evaluation to be completed on two-full years of experience. To date our research design is being designed to answer the following questions:

1. Does the Pass-fail option induce juniors & seniors in the College of LA & S. to take courses outside of their area of specialization?

2. If the Pass-fail option does induce juniors & seniors to take courses outside of their area of specialization is the non-competitive aspects of the Pass-fail option a factor?
3. Has the Pass-fail option induced more flexibility in the instructional program?
4. Is the 3.25 G.P.A. limitation for taking a pass-fail option the best cut-off point to insure student success?
5. Is the tacit assumption that non-marginal students will not use the pass-fail option as a crutch valid?
6. Are instructors generally impressed with the attitude & motivation of Pass-fail students in their courses?
7. Do the students feel that the pass-fail option is helping to unstructure the system of Higher Education?
8. What types of students are taking pass-fail courses?

The study will rely heavily on the data presently being collected by the LA & S. Advisement center, the Registrar's Student Information System, questionnaires to students who option for pass-fail courses, questionnaires to faculty members who taught classes with pass-fail students, and interviews with Deans and department chairmen. The Multiple Regression Approach will be utilized to answer the questions above.

SUMMARY DATA AVAILABLE TO DATE ON THE PASS – FAIL OPTION AT SOUTHERN ILLINOIS UNIVERSITY AT CARBONDALE, ILLINOIS

TABLE 1: Number of Students and Courses Involved with Pass-Fail Option

Item	Fall 68	Winter 69	Spring 69	Summer 69	Fall 69
Number of students taking Pass-Fail option	4	37	88	47	53
Number of students taking more than one Pass-Fail option in one quarter	0	11	9	10	6
Number of courses taken on a Pass-Fail basis	2	41	52	29	39

TABLE 2: Distribution of students in the Pass-Fail Option Through Fall Quarter 1969

1 student has taken the maximum of 16 credit hours allowed
19 students have taken from 9-15 hours of Pass-Fail credit
51 students have taken from 5-8 hours of Pass-Fail credit
94 students have taken from 1-4 hours of Pass-Fail credit
19 students have taken the maximum of 8 credit hours in any one department

TABLE 3: Number of Students from each School or College with Pass-Fail Option

School or College	Fall 68	Winter 69	Spring 69	Summer 69	Fall 69
AGRICULTURE	0	0	1	0	1
BUSINESS	0	0	0	0	1
COMMUNICATION	0	3	3	0	3
EDUCATION	0	0	1	3	1
FINE ARTS	0	1	0	0	0
GENERAL STUDIES	1	1	2	0	0
GRADUATE SCHOOL	0	0	0	3	0
LA & S	2	60	81	41	47
TECH	1	2	0	0	0
TOTAL	4	67	88	47	53

TABLE 4: The Regular Grades Distribution for Those Students Taking the Pass-Fail Option

Grade	Fall 68	Winter 69	Spring 69	Summer 69	Fall 69
A	0	10	6	3	
B	2	23	16	7	
C	1	25	28	10	
D	1	5	5	4	
E	0	2	8	2	
NOT RECEIVED	0	2	25	21	
TOTAL	4	67	88	47	

TABLE 5: Number of Students Taking Courses in Pass-Fail by Major

In Major Area	Fall 68	Winter 69	Spring 69	Summer 69	Fall 69
UNDECLARED MAJORS	2	1	4	5	0
TAKING COURSE IN MAJOR AREA	0	36	44	24	32
TAKING COURSES OUTSIDE MAJOR AREA	2	30	40	18	21
TOTAL	4	67	88	47	53

* * *

A CONCEPTUAL APPROACH FOR COMPARING GRADES WITHIN AND AMONG COLLEGES AND UNIVERSITIES

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American educators have experimented with various types of evaluation and grading systems for almost two hundred years. An historical review suggests that we have almost come full-circle in attempts to symbolize a student's academic performance and achievement. Proponents for grading systems argue chiefly in terms of the necessity for simplified evaluation measures for internal and external use. They also cite benefits of competition and other pedagogical values, and a reasonable degree of measurement reliability. Opponents of grades cite lack of validity and uniformity and claim misdirected motivation, mechanization of learning, stifling of creativity, artificiality, and the protection and encouragement of inadequate teaching. However, attempts to eliminate the assignment of evaluative symbols or descriptions have historically suffered from an inability to withstand efficacious and impressive pressures favoring grading systems. Furthermore, educational research and communication of information concerning the academic performance of students has been hampered by the multiplicity and inadequacy of grading scales presently in use.

THE PROBLEM

There are several deficiencies of existing grading systems which limit the effectiveness of them as indicators of academic performance. In addition to the problem of incomplete validity there are other deficiencies which have hampered communication and research. Some of these are:

1. **There exist many different types of grading scales currently in use thus creating problems of interpretation and communication.** According to Smallwood[1] the idea of definite grading scales using descriptive adjectives began to appear in American higher education around 1775 and by 1800 there were a variety of scales in use. By the early 1900's many colleges were using the A-to-F system or some variant of it. Miller[2] noted in 1967 that the A-to-F system, together with some special grades and a grade-point average (GPA) calculated on a 4.00 system is largely standardized in American colleges. However, there are many institutions that use quite variant schemes. For example, Rutgers University employs a "reverse" GPA system where 1.000 is the highest average (Distinguished) and 5.000 is the lowest (Failed). Usually, colleges with such atypical grading systems encounter difficulties in explaining and interpreting their system to others; in some cases, the students are at a competitive disadvantage for fellowships and graduate school admissions. Anyone who has had to interpret grades and GPA's from different colleges is aware of the difficulties of comparability.

2. **Most attempts at standardization encounter resistance which limits their universality of use.** An insistence on the use of pre-established grading "standards" or "guidelines" almost automatically encounters resistance on both philosophical and practical bases. Attempts to enforce either an absolute or a relative reference are met with resistance on the grounds of abridgment of academic freedom. Most "post-facto" compensating systems are complex, cumbersome and/or unintelligible to many educators, students, and laymen; their complexity often negates their positive aspects and restricts their utility.

3. **Present numerical and quality-point averaging systems fail to take into account substantial grading differentials existent between the various sub-divisions of an institution.** In fact, present averaging and comparison practices are based upon an implicit (and almost always unrecognized) assumption that such differentials do not exist! In a study involving 38 Minnesota colleges Hood[3] concluded that, "This study has shown that the distribution of ability levels and the distribution of academic grades differ considerably among different colleges and types of colleges. Therefore, a particular grade-point-average represents differing levels of academic achievement at different colleges." What should be added to his statement is that this is indeed true even when the colleges are divisions of a single university. Data I have collected from a broadly representative sample of twenty colleges and universities[4] during the last four years revealed substantial divisional differences in grading distributions within a single institution. For example, quality point averages of 2.70 in the Liberal Arts College and 2.20 in the College of Architecture at one institution were the median averages for those divisions and thus represented comparable academic achievement relative to each curriculum. However, performance comparisons are made and statistical aggregations (e.g. fraternity chapter averages) are computed in a fashion which ignores these differences and treats equally all grades of the same numerical value. The "university average" in the example cited was computed as 2.50 and the inference is thus fostered that the Architecture student is **below** average in performance while his compatriot in Liberal Arts is **above** average. The actual situation is that both individuals are performing **equally relative to their respective curricula.**

4. **Rank-order academic standings of heterogeneous student groups when based upon grade-point or quality point averages often give an incomplete and incorrect index of student achievement.** The relationship between GPA's and subsequent class rank do not include the assets of standard degrees of mean value or variability. Thus in knowing only any given student's rank or GPA one does not have a complete picture of the relative performance of the student. When the rankings are based upon group averages which do not take into account the divisional differences mentioned previously they can actually be substantially in error. In a continuation of the previously mentioned example, a fraternity comprised principally of architects will be ranked considerably below its appropriate standing while another fraternity consisting of liberal arts students will be ranked higher than it should be on

the basis of the curricular performance of its members (because of the differences in grading distributions of the two colleges).

THE STAG APPROACH

Overview

The Standardized Transformation of Academic Grades (STAG) approach is an attempt to resolve the difficulties of educational research and effective communication caused by the aforementioned deficiencies of present grading systems. The STAG approach is used to convert existing quality-point or numeric averages into a normalized[5] and standardized scale. Each conversion (regression) equation is based upon actual grade distribution data for the particular reference group in question and obtained from class ranking lists. The resultant transformed grade has the advantage of standard degrees of mean value and variability thus permitting more valid comparisons and a greater variety of statistical manipulations. Since the conversion is accomplished post-facto the necessity to enforce any pre-set grading standards is avoided. The institution need not change its traditional and familiar grading system but can use the STAG grades whenever inter- or intrainstitutional comparisons are deemed desirable or necessary. The standardized grade has the added feature of providing information about the relative academic performance of each individual; relative to his curriculum and relative to other individuals.

Detail of STAG Approach

The STAG approach is a relatively simple and straightforward one consisting of the following four operations:

1. **Determine the appropriate reference sub-groups** for comparison or analysis. In most universities each school, college or major division should comprise a separate sub-group. Further sub-divisions may be deemed desirable; for example, the Liberal Arts College students may be sub-divided into Humanities, Social Sciences, Physical Sciences, and Biological Sciences divisions. Sub-divisions on the basis of sex are not relevant for most applications.[5]

   The decision on whether to use one standardized distribution for the entire division (e.g. Agriculture) or to determine the distribution for each class within that division will depend upon the application. Separate distributions for each class will be more accurate than one for the entire division but the latter, if based upon the junior year distribution[6], has the advantage of being a goal referent.[7]

2. **Determine the mean GPA and standard deviation (S.D.) for the reference groups.** For example, if your reference group is junior agriculture students determine the mean GPA and S.D. for all junior agriculture students on the basis of the one year's grades.

3. **Transform the grade to any standardized scale score** by means of the equation:

$$\text{Standard Score} = \frac{\text{S.D. of New Scale}}{\text{S.D. of Referent Group}} \times \left(\text{Student's GPA} - \text{Mean GPA of Referent Group}\right) + \text{Mean Value of New Scale}$$

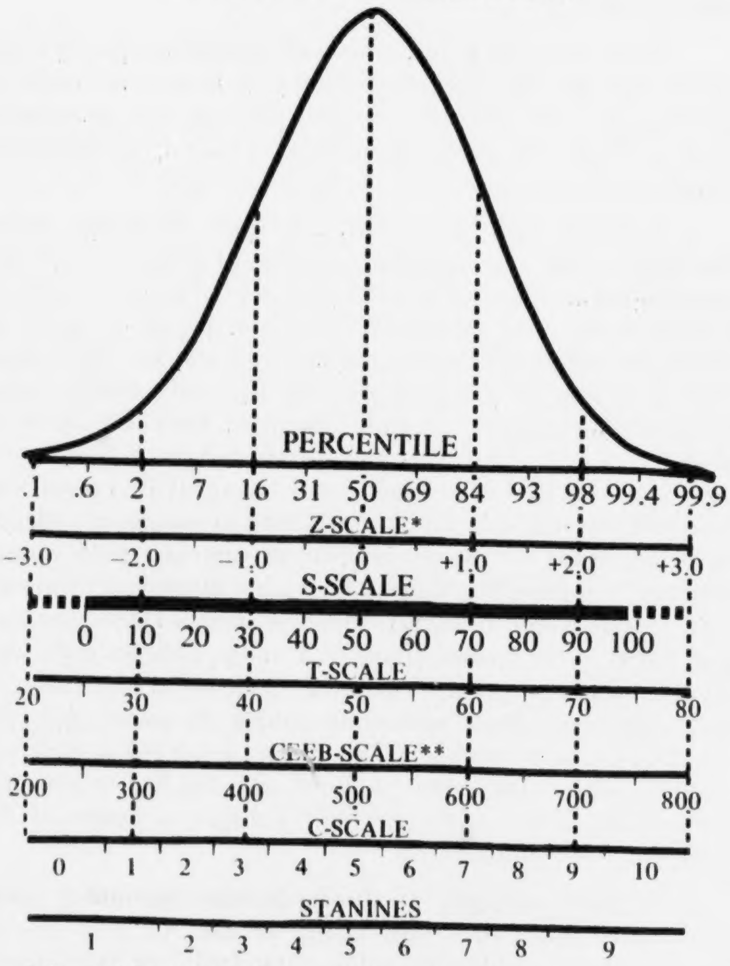
For example, using the S-scale[8] (see following chart) and the mean GPA of 2.40 and a standard deviation of .60 for junior agriculture students, a student with a 3.00 GPA in that division has an S-score of 70:

$$\text{Standard Score} = \frac{20}{.60} \times (3.00 - 2.40) + 50 = 70$$

The choice of standard scale will depend upon the particular application in mind. The "T" and "CEEB" scales are familiar to many researchers but the scale limits (practically speaking 20-80 or 200-800) are confusing to many faculty members and students who are not mathematically inclined. The stanine scale suffers from the same problem but has the practical advantage of occupying only one column on computer punched-card records. The S-scale uses a 100 point scale and its limits are more understandable to many people.[9] For guidance and counseling students on grade performance, low scores that result from the S-scale may have valuable "shock" effects.

Figure 1

RELATIONSHIP OF SEVERAL SCALES TO A NORMAL DISTRIBUTION



* Devised for this particular application (STAG)

** College Entrance Examination Board

4. **OPTIONAL: Normalize the grading distributions.** Opinions differ regarding the desirability of the normalizing procedure. It is recommended here for two reasons: a) It compensates for possible change variations in the original raw distribution (the curve is "smoothed") and; b) the resultant distribution is more likely to remain stable over a period of years thus avoiding the necessity for frequent re-calculation.

If this option is exercised a plot of the data points should be made on either linear or arithmetic probability graph paper to determine the magnititude of the changes made by the normalizing procedure. An example of the result of the above process is shown in the following graph for two divisions of a **single** university. The graph also shows the best straight line approximation (normalized curve) for each of the two college GPA distributions. The example uses the typical 4.00 quality-point system but the STAG method can be used on any other type (e.g. 100 point, etc.) of numeric scale. The Liberal Art student who was at the 50th percentile of his class (rank = 268/535) had a 2.68 junior year GPA. The agriculture student who was at the 50th percentile of his class (rank = 198/395) had a 2.41 junior year GPA. Although both students ranked in the middle of their respective college classes the Liberal Arts student had a GPA that was .27 quality-points higher than the student in Agriculture. Similar differences exist at all points of the grading distribution.

Another way to highlight the variations is to see what a given GPA means in terms of relative achievement in each of the two colleges. A student obtaining a GPA of 2.00 in Liberal Arts stands at approximately the 7th percentile (S-score = 20) of his class which is one and one-half standard deviations below the mean. On the other hand an Agriculture student with a GPA of 2.00 stands at approximately the 25th percentile (S-score = 37) which is about two-thirds of a standard deviation below the mean. Thus, the very same GPA represents two quite different achievement records!

APPLICATION OF THE STAG APPROACH

A brief example of the results of the application of the STAG approach and the different and more complete information it conveys is illustrated in the following table.

SAMPLE APPLICATION OF STAG SYSTEM CONVERSION

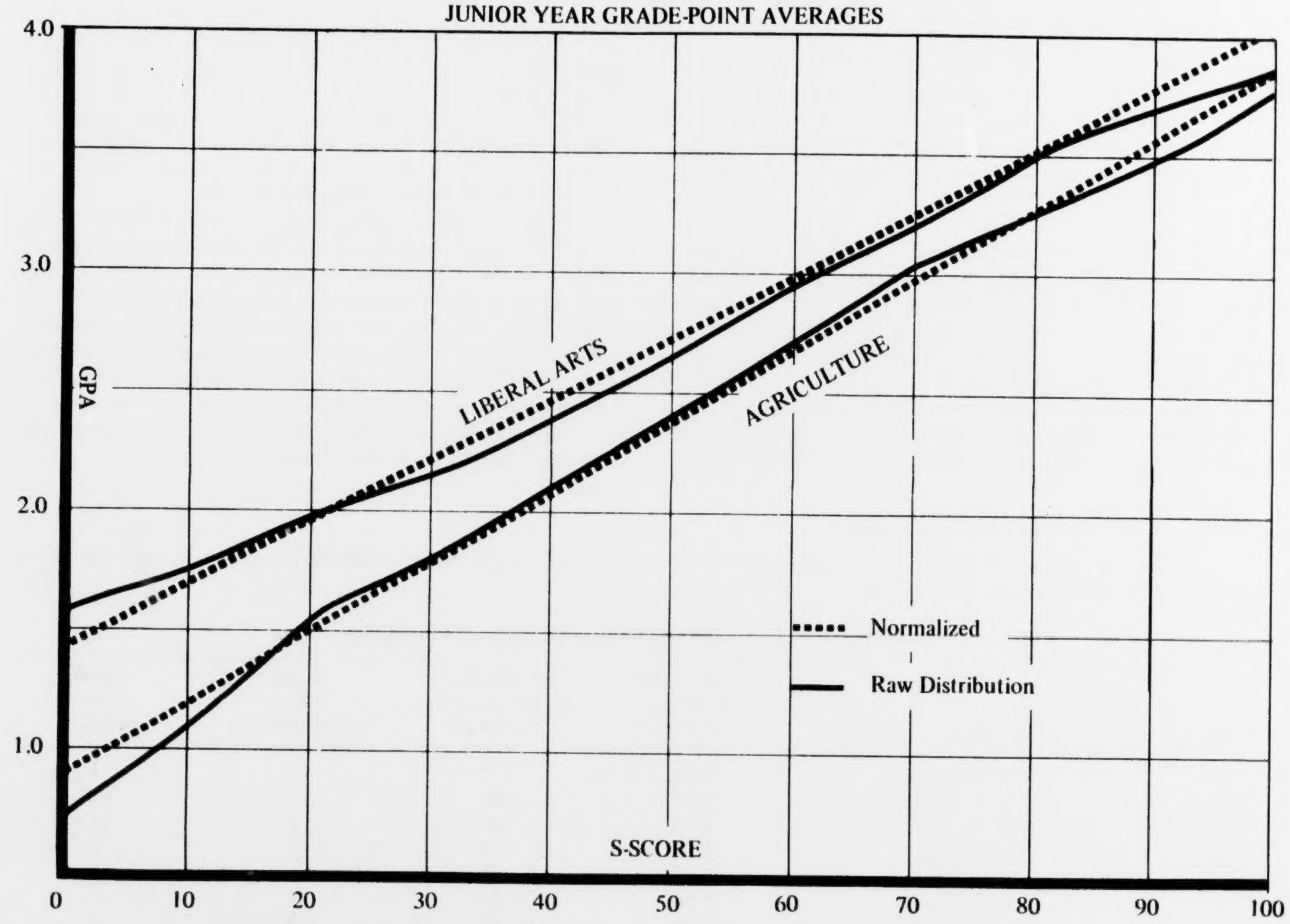
Name	Division	Quality Point Average (0-4.30 Hi)	Standardized Grade (S-Score) (0-100 Hi)	Rank by Quality Point	Rank by S-Score
Adams	Architecture	3.25	92	4	1
Baker	Hotel Admin.	3.47	91	3	2
Carey	Liberal Arts	3.70	89	1	3
Damon	Engineering	3.56	85	2	4
Evans	Agriculture	2.83	65	6	5
Fisher	Commerce	3.00	65	5	6
Green	Architecture	2.00	41	10	7
Hunter	Engineering	2.05	38	9	8
Irving	Liberal Arts	2.31	34	7	9
James	Commerce	2.10	27	8	10

In this sample application no student has lower than a 2.00 (C) average on the quality-point system and the conclusion would often be drawn by most students and other observers that all of the students are performing at or above "average". More sophisticated observers might make a mental referent of the GPA to what they believe to be "average" performance for the university. Yet when the averages are converted to the standardized scale it can easily be seen that four individuals have averages below the mean (50) and one student, James, has a score more than one standard deviation (greater than 20 points) below the mean; his average is sufficiently low to justify some concern about his future performance in his curriculum area. The standardized score immediately and readily conveys the information regarding the student's relative class standing **in his division.**

The rank order position of the students changes markedly also; the student with the fourth highest quality-point-average (Adams) has the highest S-score average. The differences are due to the different GPA distributions for each one of the university divisions. In this case, Architecture has a more suppressed distribution than Hotel Administration, Liberal Arts, and Engineering. University-wide ranking on the basis of a standardized grade is more appropriate for many internal applications such as making awards based upon scholastic performance.

On the basis of the converted S-scores Evans and Fisher are shown to be equally ranked. Both students are shown to be three-quarters of a standard deviation (15 points) above the mean averages (50 points) in their respective curricular areas. When ranked by unadjusted quality points the inference is given that Fisher has achieved in a superior manner to Evans; if the criterion is performance relative to the curricular classmates the inference is incorrect. It is impossible to tell where each one of them stands in relation to his classmates on the basis of the quality-point-average.

Figure 2
JUNIOR YEAR GRADE-POINT AVERAGES



THE STAG APPROACH VS. PRESENT SYSTEMS

The STAG approach transforms quality-point or numeric averages of sub-divisions of a college or university into standardized and normalized grades. The 100-point S-scale has the attributes of a mean of 50 and a standard deviation of 20 points thus permitting ease of statistical manipulation and meaningful resultant comparisons.

An institution can use the STAG approach for inter- and intrauniversity comparisons and since the standardized grade represents the same relative achievement level in any college or curriculum, interpretation and communication can be enhanced.

The STAG method is applied post-facto and designed to supplement existing grading systems; it is not necessary for a college or university to change its grading procedures. The system is easy to understand and apply and is adaptable to both manual or computer application.

Differentials in grading distributions of the various sub-divisions of an institution are compensated for in the STAG approach and similar standardized scores do represent similar achievement in terms of divisional performance.

A standardized score has incorporated in it information pertaining to the relationship of the individual (or group) to the mean performance level; a more complete picture of the performance of a student relative to his curricular area is thus afforded.

Class rankings of groups of students is much more appropriate for many applications when based upon standardized scores than when based on GPA's when the group is comprised of students from many different colleges or sub-divisions of a university.

The STAG method of compensating for divisional grading variations and for evaluating and comparing academic performance should be of assistance to anyone concerned with evaluating scholarship for purposes of educational research, educational-vocational counseling, financial aid, admissions or employment. Use of the STAG method should facilitate inter- and intrauniversity comparisons on either an individual or group basis.

[1] Smallwood, Mary L. *An Historical Study of Examinations and Grading Systems in Early American Universities.* (Harvard Studies in Education, Vol. 24), Cambridge, Mass: Harvard University Press, 1935.

[2] Miller, Stuart. "Measure, Number, and Weight: A Polemical Statement of the College Grading Problem". (Ann Arbor: Center for Research on Learning and Teaching, The University of Michigan, 1967).

[3] Hood, Albert B. "A Method of Comparing Student Achievement Levels at Different Colleges", *Personnel and Guidance Journal,* April 1967. pp. 799-803.

[4] Amherst, Univ. of Cal. (Berkeley), Bowdoin, Cornell, Univ. of Georgia, Hamilton, Univ. of Illinois, Univ. of Michigan, Middlebury, Univ. of North Carolina, Northwestern, Univ. of Oregon, Rutgers, Univ. of South Carolina, Stanford, Union, Univ. of the South, Univ. of Virginia, Univ. of Washington, Wesleyan.

[5] The most relevant criterion is usually how the student compares with his curriculum group – not with his sex group. Graduation requirements are not different for the sexes. There may be cases, however, where sex groupings would be appropriate.

[6] This choice is somewhat arbitrary but based upon the student personnel literature. Freshmen grades are considered atypical due to adjustment problems by the student; many sophomores fall victim to a "sophomore slump"; seniors attention and performance is often affected by future career plans. The junior (3rd) year is generally considered to be the most stable; the resultant distribution will thus be essentially the most general and realistic.

[7] A freshman's grades would convert to a higher score on a freshman-based scale than on a junior-based scale but if the freshman *were to maintain the identical average* the latter score would show him where he *would* stand as a junior.

[8] S-scale range 0-100 (Hi); Mean = 50; S.D. = 20.

[9] Although it covers less than the full probability range, in this type of application the extremities (which account for only .6 percent of the cases on each end of the scale) are less important; all scores falling at or above the maximum are equated to 100 and likewise all falling at or below the minimum are equated to 0. The positive advantages of a familiar 100-point scale outweigh the loss of distinction at the scale extremities – a distinction that would imply an accuracy level that in some applications is not warranted and frequently mis-valued. For this same reason (implied and unwarranted accuracy) it is recommended that the S-Grade NOT be carried to any greater distinction than the nearest whole unit! If further refinement is needed some other attribute of the students should be the basis of the distinction.

* * *

EVALUATION OF THE NEW YORK CITY INTENSIVE TEACHER EDUCATION PROGRAMS

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The City University of New York is among the largest teacher training institutions in the United States. Currently, nearly 45,000 students are enrolled in teacher education programs in eight senior colleges and the graduate center of the University. During 1969, approximately 6,700 teachers were graduated from the University with baccalaureate and advanced degrees. Each year, some 5,000 of these graduates accept positions as teachers in the New York City public schools.

Although exact statistics are not available, New York City, with a staff of over 60,000 teachers, has need for from 7,000 to 8,000 new teachers each year. These teachers are needed to replace normal turnover, meet increasing enrollments and to implement new programs. The City University of New York has consistently met about 60 per cent of this need.

In the spring of 1966 the Board of Education became aware that a serious shortage of teacher personnel was likely to occur the following September unless emergency measures were taken. With support available from the federal government, plans were instituted for the Intensive Teacher Training Program, a crash training program to meet the impending teacher shortage. The Intensive Teacher Training Program, (ITTP), later renamed the Intensive Teacher Education Program (ITEP), was a joint enterprise of the City University of New York and New York City Board of Education. In the following two years New York University also participated. In the three-year period of the program, more than 5,000 qualified college graduates who had few or none of the professional education courses required of applicants for New York City teaching licenses were given the opportunity to pursue an intensive summer program in teacher education. In the fall, participants held full-time teaching assignments, accompanied by a college seminar in problems of teaching along with a special in-service orientation program.

Funds for the first year of the program were obtained by the New York City Board of Education under Title I of the Elementary and Secondary Education Act, Public Law 89-10. The second and third years were financed by regular funds from the Board of Education. The Board of Education made a commitment to offer employment in the City schools, in the following September, for a period of one year and to continue a special orientation and training program during that year. In return, each participant committed himself to accept the assigned position, to serve for the one-year period, and to register for the fall seminar.

The usual college fees and related costs for all participants who attended the summer sessions and fall seminars were paid by the program.

Each applicant was required to submit evidence of the receipt of the baccalaureate degree. There were no age requirements. An applicant was required to be a citizen of the United States or a legal declarant of his intentions to become a citizen of the United States.

Each applicant was required to successfully pass the following City examinations:

1. A test in written English, in which an essay written by the applicant was rated for written English only.
2. An interview test to evaluate the applicant's ability to discuss problems relating to his subject or to the teaching of his subject, those aspects of personality in which an interview afforded a basis of judgment, the applicant's oral reading ability, and his use of English in discussions.
3. An appraisal of his scholastic record.
4. A physical and medical test.

Upon successful completion of the summer program each participant was issued a Conditional Substitute Teacher License. After one year of satisfactory teaching, plus completion of the minimum academic and professional requirements prescribed for the various regular substitute licenses, the conditional license could be converted without fee, to a regular license.

The first year of the program was conducted at the City College of New York for an enrollment of 2,110 liberal arts graduates.[1] The second year was conducted at New York University for an enrollment of 1,249 and at Hunter College for 310.[2] The third and final year took place at New York University for 500 and at the City University of New York: Brooklyn College, 208; City College, 221; Hunter College, 208; Lehman College 202; and, Queens College, 87.

Table 1

Enrollment in ITTP and ITEP

Year	College	Number
1966	CCNY	2,110
1967	NYU	1,249
	Hunter	310
1968	NYU	500
	CCNY	221
	Brooklyn	208
	Hunter	208
	Lehman	202
	Queens	87
Total		5,095

For the City University, the objectives of the program were: 1) To aid in the recruitment of from 1,500 to 3,000 more teachers per year than could be recruited by ordinary procedures, and 2) to develop materials and procedures for on-the-job orientation, training, and support of beginning teachers in programs of education of children from disadvantaged backgrounds.

The Evaluation

The first year of the project was evaluated by the Office of Research and Evaluation, now the Office of Institutional Research and Program Evaluation (IRPE) of the Division of Teacher Education of the City University of New York. The second year was evaluated by the Center on Urban Education and the third year was again evaluated by IRPE.

Information was collected on recruitment procedures, screening of applicants, choice of faculty, content of courses, materials used and the reactions of students, faculty, cooperating teachers and supervisors to the program.

Records were kept on holding power through the summer and fall semesters, as well as placement of graduates and future attrition in these positions.

Competence and success in teaching were measured by principal's ratings, classroom observation and personal questionnaires.

The principal objectives of the evaluation were:

1. To add to our knowledge concerning the recruitment and selection of teachers in an urban setting, needed preparation for a beginning teaching position and in-service growth of new teachers.
2. To explore factors that might influence the effectiveness of beginning teachers.
3. To determine the degree to which the abbreviated pre-service program plus on-the-job teaching experience and supervision qualified the participants to carry out a responsible teaching assignment.
4. To contribute, through the study of the persistence of the participants, to an understanding of factors associated with turnover in the teacher profession.

The Students

When the ITTP was first organized in 1966 it was conceived of as a way of meeting the teacher shortage by attracting persons seeking a second career in teaching. However, even though the first year had an almost equal division of male and female and covered a wide age range, forty-three per cent of the trainees had received their baccalaureate degrees in the month immediately preceding the program and fifty-three per cent were under 25 years of age.

In the following years, the ratio of male to female increased from 57 per cent male to 71 percent to 87 per cent. The per cent of males under 25 years of age increased from 64 percent to 74 percent to 91 per cent. It was evident that the consistent pressure of the draft, as well as the fact that the ITEP provided an alternative to more time-consuming graduate training in teacher education, had changed the original direction of the program.

Table 2

Sex of ITTP and ITEP Students

Year	Male	Female
1966	57%	43%
1967	71	29
1968	87	13

Table 3

Percentage of Students Under 25 Years of Age

Year	Male	Female
1966	64%	38%
1967	74	51
1968	91	61

Table 4

Percentage of Students Over 40 Years of Age

Year	Male	Female
1966	14%	31%
1967	6	16
1968	1	9

As the popularity of the program increased, so did the competition for enrollment. In the final year there were approximately twelve applicants for each opening. An attempt was made to include all applicants from disadvantaged groups, but few were recruited. In general, the last year students were selected on a basis of high scholastic achievement.

The Program

Each college planned its own program in relation to how its administrators and staff felt their resources could best be utilized to meet the needs of beginning teachers in an urban setting with no prior training in education. The programs necessarily had much in common because of the limited time available for planning and staffing, the restricted availability of natural practice teaching areas to the summer schools, and the similarity of traditional programs in teacher education in general. Credits were not transferable from one college to another and students could not under any circumstances change programs between summer and fall sessions.

The first year program employed no practice teaching, but relied upon simulated demonstration. In the following two years, an attempt was made to add a minimal amount of actual classroom observation and practice.

In general the elementary programs offered a condensed set of courses dealing with child development, teaching methods and language arts. The secondary programs included general and special methods and social and psychological foundations. All of these courses were centered around a common urban core. The fall seminars all dealt with problems of teaching and were generally conducted around actual problems faced by the beginning teachers. Although the psychological staff was primarily recruited from the colleges, the majority of the teaching staff in the programs were recruited from the public school faculties and administration.

In the fall, the trainees were assigned to District Superintendents of the thirty local districts of the City, who assigned them to individual schools. In the first year, 152 trainees were assigned to non-public schools as remedial reading and arithmetic teachers under various Title I programs of the ESEA. No trainees were required to teach in the three demonstration districts which were organized during the second year of the program, but a small number of volunteers were assigned to these schools.

Holding Power

In each group, about 90 per cent of those enrolling in the program, completed the summer course. Over eighty per cent of those who graduated and were eligible to teach were still teaching after one year. This represented about 75 per cent of all who enrolled in the program. After two years about 60 per cent of those eligible to teach or 55 per cent of those originally enrolled were still employed. Of the first year group, 51 per cent of those eligible or 45 per cent of those enrolled were still employed in the New York City schools four years after the program. Unfortunately, at this time there are no comparable statistics available on the attrition rates of regularly trained beginning teachers in the system.

Cost

Over the three year period approximately $1,700,000 was spent on the program including a small sum for evaluation. Dividing this by the 5,095 trainees enrolled, the cost per trainee came to $325 per student. If we divide by the 3,821 trainees who taught for one year, the cost amounts to $445 per teacher or 5 per cent of a beginning teacher's annual salary.

Table 5

1966 ITTP CCNY

Group	Enrolled June 1966	Graduated July 1966	Teaching May 1967	Teaching May 1970
Elementary	1295	1127	1006	592
Secondary	815	731	577	363
Total	2110	1858	1583	955

Table 6

1968 ITEP CUNY

Group	Enrolled June 1967	Graduated July 1967	Teaching May 1969	Teaching May 1970
Elementary	743	686	576	428
Secondary	186	169	138	80
Total	929	855	705	508

If the criterion were to be the 2,800 teaching for two years, the cost per teacher would be $605 or 3 per cent of two year's teaching salary. Assuming that the same rates of attrition hold for the second and third year groups, at four years the cost for 2,300 teachers would be $739 or 2 per cent of four year's salary per teacher.

Competence of Trainees

Principal's evaluations indicated that on the average, the trainees were comparable with beginning teachers from the traditional programs. Seventy-two per cent were rated as average, above average or excellent in performance. However, at all levels of ability, principals rated the regular teachers slightly higher in reference to methodology and technique.

On self-appraisal instruments, the trainees considered themselves to be of average or above average competence. The trainees appraised themselves as strong in motivation and interpersonal relationships but weak in the area of methodology of teaching. Most trainees regretted their lack of practice teaching experience.

When classrooms were observed by trained observers measuring 14 aspects of teaching competence, there were no statistically significant differences between the ITTP and regular beginning teachers.

Problems of the Evaluation

Colleges today are besieged with requests to undertake crash programs of various sorts, especially in areas where the program can result in a decrease of time or unit cost per student trained. The Intensive Teacher Education Program eliminated not only various education courses, but student teaching experiences as well. These field experiences are largely responsible for the comparatively high cost of conventional teacher education.

The evaluation permitted us to examine a shortened teacher education seqence with no regular student teaching component. The education departments at the various colleges involved were forced to assign priorities in condensing their existing programs. The fact that these priorities and the resulting programs differed from college to college enabled us to examine possible alternatives and innovations for future regular teacher education programs.

One of the major problems in the evaluation of crash projects is that the evaluators are seldom included in the planning stage. Thus, the evaluation takes on a secondary rather than a primary role. The evaluation team is always a step or two behind the administrators of the project and the possibility for valuable feed-back is lost due to the limited duration of the project. Even the ITEP which extended over three years, was fragmented into three separate projects each organized late in the spring and beginning immediately after the spring semester. Had the evaluation been built into the planning of the program, a valuable liaison could have been set up with predetermined points of feed-back to the project.

In a crash program an ex post facto evaluation is of value only to those who may plan a similar project in the future; whereas, regularly scheduled feed-back sessions while a project is in progress can often lead to changes which can mean the difference between success and failure.

Moreover, too often, half of the evaluator's time is spent in trying to define the objectives of a project which has been underway for some time. The evaluator should be present at the time of the formation of objectives and should aid in seeing that these objectives are stated in operational or measurable terms.

Postcript

The project was terminated after the 1968 group completed their first year of teaching. In September of 1968 for the first time in many years, the New York City public schools began the school year with all positions filled. In fact, many of the ITEP's were required to take "above quota" positions and some were used as daily full time substitutes.

In 1969 the Board of Education dissolved the substitute license and replaced it with an "Alternate B" license. This license allows any liberal arts graduate with the equivalent of 12 hours of education credit to take the City examinations previously given to ITEP's. On the completion of a year's satisfactory teaching, he will be awarded a permanent license. In 1969-70 over 3,000 persons have taken these exams to qualify for positions in the 1970-71 school year.

Discussion

Was the program a success? The program recruited over 5,000 liberal arts students in three years, over half of whom are still teaching at what has been determined to be an adequate degree of competence. A majority of these are young men whose presence is sorely needed in the elementary schools.

One cannot fail to ask, however, since most of these young men received their baccalaureate degrees in the month immediately prior to the program, would it not have been more advisable for them to have entered directly into a graduate program in education? If it were not for the draft and the war would many of these young men have entered the program even though it offered a short cut into a steady job? How many will stay on when the draft is no longer a threat? How many will go on for advanced degrees in teacher education?

We know that the group was highly motivated to stay on for at least a year as contracted. The 1967-68 school year began and ended with a teachers' strike and the 1968-69 year opened with a long and bitter strike. Beginning ITEP's whose status was somewhere between a student and a teacher were not members of the Union and as substitutes were not paid except for when they taught. In spite of these additional problems beyond just getting oriented to teaching in the City system, the attrition rate in those years differed little from the first year when there were few extra problems.

Is the new "Alternate B" license comparable to the ITEP experience? The ITEP courses, while condensed from the traditional programs, did present what the colleges believed to be the priority offerings of a teacher education program. The "Alternate B" accepts any 12 education or related credits. The ITEP students met in Fall seminars where problems encountered in their classrooms could be discussed and evaluated by their experienced instructors. The college had exercised previous selection procedures and the trainees had demonstrated their commitment by staying through the summer program. There will be no such evidence of commitment in the Alternate B.

Lastly, the program developed an **esprit de corps.** Throughout the program the participants were treated as part of a special group engaged in an experiment of interest to both the colleges and the New York City Board of Education. What effect this had on the program cannot be measured. How many of the trainees will continue to register for education courses leading to the master's degree can only be answered by future longitudinal study.

If a substantial percentage of new teachers are to be obtained through similar programs or to be recruited on "Alternate B" licenses, what will be the long-term effects on the quality of teaching? Unless the trainees are encouraged or required to continue their professional training, the level of quality will gradually decline. On the other hand, the fact that trained observers could not distinguish the ITEP's from those teachers who had taken the full 180 hours of practice teaching raises an interesting challenge to present student teaching programs.

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[1] Lohman, Maurice A., Albert J. Harris, *et al. An Evaluation of the Intensive Teacher Training Program,* Office of Research and Evaluation, The Division of Teacher Education, The City University of New York, New York: June 1967.

[2] Fox, David J. and Audry Herr. *Intensive Teacher Training Program 1967-68*, Project No. 2868, Center for Urban Education, New York: December, 1968.

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COMMUNICATING THROUGH STUDIES – STUDENT FOLLOW-UP STUDIES

WHY FOLLOW-UP STUDIES?

Fletcher F. Carter
Radford College

The Council of Deans is meeting and the President of the College walks in and sits down. The talk settles into the usual disagreements about curriculum problems. The Dean of General Studies is worried about the number of freshmen drop-outs last semester. The Dean of Business Administration wants to talk about a recent letter from a colleague on Wall Street who has criticized the preparation of the most recent group of graduates. The Dean of Arts and Sciences shows concern that the Physics graduates aren't getting jobs. Suddenly, out of the gloom, at the far end of the table, the Dean of Education says, "Let's do a follow-up study, fellows. It will answer a lot of our questions".

Another follow-up study is on the way. That afternoon the President calls in his Director of Institutional Research and tells him about the Council's request. The Director accepts the job and then asks a crucial question, "Why do you want a follow-up study?"

The President glares at him a moment, then answers, "We need to know what is happening to our graduates. What jobs are they getting? Are they satisfied with their working conditions? Why are our freshmen dropping out?"

The Director squirms in his seat and then asks another crucial question, "How are you going to use the results of the study?" On the answer to that question, hangs the entire history of follow-up studies.

Follow-up studies are probably as old as man himself. Not the rigorous, disciplined studies which we make today but the type of reasoning that goes into the study. For wherever man has realistically attacked a problem concerning his actions, he has attempted to deduce reasons why certain things happened as they did. From these reasons, he has attempted to reform his actions so that they were more successful the next time they were used.

Today, follow-up studies are all around us. Just last week, President Nixon was probably reassured in his Cambodian decision by a Gallop Poll which showed that 60 percent of the American people backed him there. Industries run follow-ups in order to find out how their products are selling and what criticisms people are making of them. A very controversial follow-up is the Nielson ratings in the television industry.

In today's educational world, the magic word is evaluation. And the magic tool is follow-up. And the magic question is still the same, "What are you going to do with the results?" Since 1900, the amount of data accumulated in follow-up studies would build a levee on both sides of the Mississippi from here to Lake Itasca. And yet educational theory hasn't changed very much since 1900, especially in higher education.

What are follow-up studies and why are they needed? To answer the first part of this question is relatively simple. A working definition might be that a follow-up study is that research which attempts to describe the present status of former students in the light of certain prior experiences for the purpose of evaluating those experiences.

For higher education, those prior experiences are the sum total of college experiences whatever they may be. The study may be narrow and seek information on only a few experiences such as the effect of a certain curriculum or the study may be comprehensive and study the broad spectrum of all experiences at the College. The study may be short-range such as finding if graduates do get jobs or if drop-outs eventually return to college or the study may be long range such as Terman's study of genius over several decades. There are "one-shot" studies which seek answers to pressing problems and there are continuing studies which seek basic theoretical answers. In short, the follow-up study is one of the basic techniques in research.

It is not always basic. Prior to 1900, according to Gilbert Saxe,[1] educational administrators based their decisions upon a **priori** value judgments and what passed for common sense. The comparison between the institution of higher education and the growing industrial empire brought the need for reform to colleges and universities. This in turn brought about the need to study the university empirically.

Business in the United States, because of its materialism, has always been pragmatic. Under the press of business and industrial needs, institutions of higher education began to introduce more vocational and professional curricula. This in turn brought about a need for the evaluation of the curricula to find out if in truth the curricula was training students to meet the needs of industry. The follow-up study became an important technique for determining the answer to this question.

Educational research came of age in World War I and following this crisis, follow-up studies began to multiply. According to Wrightstone,[2] these early studies were concerned with the solving of immediate problems and in many cases contributed very little toward the science of education. During the Twenties and Thirties, many suggestions, often without preplanning, were tried in American colleges and high schools. In 1930, the Progressive Education Association felt the need to "encourage progressive high schools" and set about the Eight Year Study. The follow-up studies resulting from the Study were the first really comprehensive studies.

Just prior to and following World War II, the nation's colleges were confronted with a crisis of numbers. State commissions began to study ways of coordinating higher education. Two of these, the Minnesota Commission on Higher Education and the New York Board of Regents instituted studies of their state colleges and universities. Follow-up studies contributed to the understanding of the needs of education in these states.

Despite the growing complexity of these studies, criticism abounded. Thorndike voiced the opinion in 1957 that because of the difficulty of measuring the products of education, studies often retreat to appraising the structure of the school and its processes. Such an appraisal is rarely based on provable assumptions. Perhaps, Griffiths said it better in criticising administrative research that the greatest weakness was a lack of theory.[3]

With the impact of Federal money in higher education came the rise of project evaluation. Federal projects demanded that objectives be outlined. With the publication of Bloom's Taxonomy and the work of such men as Mager, Stake, Raths and many others, educational objectives became behaviorally oriented. Researchers are thinking of college as being a set of experiences rather than processes. The behavioral sciences are providing the theory for this thinking. Follow-up studies are profitting by the increasing orientation to this theory. In recent years, the large testing companies as well as the various centers for the study of higher education and its evaluation have begun formulating follow-up devices based upon behavioral theory. It is to be hoped that with the use of such devices that evaluation research and follow-up studies will become more theory-oriented.

The use of behavioral theory in colleges will produce a product which can be measured in terms of the effect of the college environment upon the student. When accurate measurements are made, accurate changes in college policies can be instituted and higher education will become a science.

To get back to our President who has been studying the question put to him by the Director. "Why, of course, we will use this information to study the college environment and make changes in policies". If he makes such a statement, he will have answered the question, "Why Follow-Up Studies?"

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[1] Saxe, Gilbert. *Empirical Foundations of Educational Research*. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1968.

[2] Wrightstone, J. Wayne. "Evaluation" *Encyclopedia of Educational Research*, 2nd Edition. New York: The Macmillan Co., 1950.

[3] Griffiths, Daniel E. *Research in Educational Administration.* New York: Bureau of Publications, Teachers College, Columbia University, 1959.

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FOLLOW–UP STUDIES OF COLLEGE GRADUATES

C. Robert Pace
University of California – Los Angeles

One of the current projects in the R & D Center for the Study of Evaluation is a nationwide study of college alumni. The data were collected in the winter and spring of 1969 and we hope to have published reports by winter or spring 1971.

The men and women we are studying graduated from college in June 1950. They are adults, around age 40, established in their careers, their communities and their families. Seventy-four colleges and universities provided us with a random sample of their 1950 graduates. The colleges and universities were selected so as to provide examples of different types of environments:

1) Highly selective liberal arts colleges, private, non-sectarian,
2) Strongly denominational liberal arts colleges,
3) General liberal arts colleges, non-sectarian and nominally denominational,
4) Highly selective universities,
5) General comprehensive universities,
6) State colleges and other less comprehensive universities,
7) Colleges and universities with a primary emphasis on engineering and sciences, and
8) Colleges with a primary emphasis on teacher education.

The reason for this deliberate selection is that we wished to examine the diversity of higher institutions.

We obtained questionnaire returns from about 10,000 former students roughly 60 to 65 per cent of those who received them. The best rate of return, about 70 per cent, came from graduates of highly selective colleges and universities, and from engineering and science schools. The poorest, about 50 per cent, came from state colleges and teachers colleges. We sent a follow-up postcard a few weeks after the initial mailing and a letter with a second copy of the questionnaire several weeks after the postcard.

The printed questionnaire, 20 pages, had an illustrated cover page, was printed in brown ink, and the response spaces were arranged for high speed scanning and scoring by Measurement Research Center.

Despite the apprehension that is often expressed today about the reluctance of people to answer questionnaires, and especially long questionnaires, our rate of returns was about the same as that obtained by the Research Division of **Time** magazine in a nationwide survey of college graduates conducted in 1948. Our view has been, and still is, that most college graduates will fill out a questionnaire, even if it takes an hour to do it, if they regard the content as important and interesting, and the purpose a worthy one.

The content of the Alumni Survey questionnaire deals with a variety of social indicators that we believe are relevant to broad educational purposes, with various aspects of school and college experience, and with information related to personal background, traits, and present status.

The first part of the questionnaire consists of 1) a set of "activity scales" measuring the extent of interest and involvement in various aspects of contemporary society – the local community, national and state politics, international affairs, intercultural affairs, science, religion, art, music, drama, literature, and education, 2) items regarding awareness of and views about major social trends and conditions, and 3) ratings of educational benefits. We regard all these as "criterion" measures. The particular combination of items that produces the measurement or score is meant to have reasonably apparent content validity and to be psychometrically defensible with respect to such properties as scaleability (where appropriate), discrimination, and reliability. The short activity scales, ranging from 9 to 14 items each, have estimated reliabilities in the 70's. Within each scale item intercorrelations are all positive, and every item contributes significantly to the score of which it is a part. In addition to these scores there are others that cut across several scales – such as the breadth of one's reading. The items dealing with viewpoints and awareness of social change also produce not only total scores but scores for various topics such as education, the labor market, government planning, the economy, etc. Altogether, there are about 40 scores or indicators in this first section of the questionnaire.

The second section relates to various school and college experience – major field, residence, grades, faculty contacts, extracurricular activities, general satisfaction, etc. And the third section inquires about personal information and background – parents, residence, SES, politics, religion, race, nationality, occupation. It also includes a short vocabulary test and a short adaptation of four traits from the Omnibus Personality Inventory – theoretical orientation, complexity, autonomy, and anxiety.

In analyzing the results we shall be looking for both general and differential patterns. The differential patterns one finds will no doubt be related to post-college experience, and to personal traits, and background, as well as to broad differences in the college experience. One can draw lines between adult interests, activities, and attitudes, and a set of experiences twenty years previously: The results are part of a life history that includes within it four years of experience in a college environment. There are major differences among college environments and among the students who inhabit them and the experiences they are likely to have in them. Some of these same types of differences will still be observable in the lives of graduates twenty years later. But this is not to say that the college experience "explains" the results. Indeed, I would argue that the input-output model typically used in college impact studies is generally inappropriate. At any rate, I do not think of students as raw material that are somehow to be processed and turned into a product. The production line or efficiency model is a poor analogy. I think of colleges and universities as environments for exploration – of self, of knowledge, of work, of conscience, and of community. With this broader perspective it is quite relevant to inquire about the range and depth of interests and activities of college educated adults in the larger society and about their attitudes, values, and belief systems. Such data reflect the attainment of important educational objectives regardless of whether one can explain the attainment as a consequence of education. In this sense, perhaps it is more productive to think of one's data as providing social indicators of educational values.

My general view is that if one wants to look at the lives of alumni twenty years after graduation one should do so in the belief that an understanding of this particular segment of the adult population is important in its own right. The understanding to be gained can contribute to informed public judgments and to educational debate. Providing stimulus for debate, judgment, and decision is one of the things that evaluation is all about.

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FOLLOW-UP STUDIES OF NO SHOWS, DROPOUTS, AND OTHER STUDENT GROUPS

Donald G. Wallace
Drake University

To preface my remarks about studies done of no-shows, dropouts, and other student groups, I should define two terms. I have taken the word "student" to include new students who have been officially admitted to the University through those persons who have received a baccalaureate degree within a year of the time when the study was made. This is not the ordinary definition of a student, since it includes those who have not yet reached the campus and those who have already left with a bachelor's degree. The second term that should be clarified is "research". The studies that I will be reporting to you are not intended for journal publication, nor was the impetus for the studies from any outside source other than the University itself. The distribution of these studies has been primarily internal, although a limited number had been circulated to other institutional research offices. The research is basically of the applied variety, rather than theoretical, dealing with items of immediate importance and use to the University.

In each of the studies that I will be reporting on today, I have used basically the same questionnaire technique. The questionnaires have been relatively simple, designed first to acquire some background data such as sex, college, age, etc., a checklist that the student can respond to and lots of space where the respondent can provide any information that he feels he wishes to bring to our attention. The questionnaires are always sent out with a letter of explanation so that those receiving the questionnaires will know exactly why the study is being carried on. Within a week after the initial mailing of the questionnaires themselves, a post card is sent to everyone on the mailing list, asking that they complete and return the questionnaire as soon as possible, or if they have already responded, expressing the thanks of the University for their participation in the study. Two weeks following the mailing of the post card we have sent another letter explaining that we have heard from "X" percentage of the population being studied but have not heard from the particular person to whom the second follow-up was sent. The letter suggests that the person may have mislaid it, or put it aside, or may even have thrown it in the basket, not thinking that we were really serious about the study. A duplicate copy of the questionnaire is included as a part of the second follow-up, and the persons addressed are asked to complete the form and return it to us as soon as possible. A self-addressed stamped envelope is sent with the original questionnaire and with the second follow-up to facilitate a high degree of return.

Another distinguishing characteristic of this type of study that I am going to describe to you is the absence of esoteric statistics or complicated tables that might be of primary importance to a research person, but which might "turn off" the administrators or others on campus to whom the report is sent. My personal experience is that the simpler the interpretation of the analysis the more apt it is to be read and acted upon. Basically, statistics are represented only in terms of percentages and an occasional Chi square.

I. A study was completed in 1967 of a group of 454 students who had applied for admission to Drake for the fall of 1967, had been admitted, but who had later asked that their admission be cancelled. A questionnaire such as described above was sent to each of these persons, with the most unexpected and astonishing return that I have ever had with a questionnaire study. Out of the 454 questionnaires sent, 442, or 97.4 per cent were received. What is especially significant is that none of these "students" had actually taken any work at Drake and, in fact, had told us that while they were admissible, they were not going to attend the University.

The analysis of these data indicated that most of the students went to college, typically at a state college or university or at a school in their home state. We also noted that 42 per cent of all persons accepted for admission as new students from the state of Illinois had cancelled before the beginning of the fall semester. Many indicated that they had received a grant from the state of Illinois, which could be used only for a private institution in Illinois.

Perhaps the most dramatic result of this study was that my president, knowing that we were surrounded by states that had tuition grant programs for students wishing to attend private schools, while Iowa did not, organized a small group of two or three other presidents who sounded out members of the State Legislature to see what success we might have with such a bill in Iowa. The responses were very encouraging and a friendly legislator was persuaded to introduce such a bill in the 1968 Legislative Session. The presidents of all of the private colleges in Iowa worked for passage of the bill and we also had the unique situation of an agreement from the presidents of the three State Universities not to oppose in any way the passage of this bill. To our surprise, the State Legislature passed the bill and appropriated a modest four and one-half million dollars for a biennal program effective with the students entering in the fall of 1969.

In addition to this legislative result, there were other gains for the University, for we had an opportunity to question those applicants who had cancelled regarding our admissions procedures and public contacts. We were considerably encouraged by the good-will indicated by this group and by the favorable reactions they made, both on a checklist and in written comments about the work of the admissions counselors of the University.

II. A study was made in the fall of 1969 of applicants for admission who had been admitted, who had not notified the University that they were cancelling, or not planning to attend in the fall of 1969, but who failed to register for that fall semester. Using the same questionnaire technique as described above, we received useful returns from 124 of the original group of 166 "no-shows", or a 75 percent return. Compared with the first study, this may suggest a possible hypothesis that "the more remote the student is from direct study on the campus, the greater the probability that the student will participate in a questionnaire study". Fortunately, this had not been the case, for we have had other studies of enrolled students where we have had as high as an 85 per cent response.

As was the case with the study of the students who cancelled, most "no-shows" enrolled in another college, typically again, a state institution or one closer to home. This fact, plus comments made by a large number of students, indicated that the primary reason for non-attendance at our institution was a simple matter of economics. As tuition at private institutions is forced higher and higher, I personally would expect that this competition from state institutions or institutions closer to students' homes will accelerate. However, more than half of those who had initially enrolled in another institution indicated that they still plan to attend Drake later, either in their sophomore or junior year, or that they would attend for graduate study or in our law school.

We did discover several cases of students who had fully intended to attend Drake but who failed to receive any confirmation of their admission from the University. The comments from these students were sent immediately to the Office of Institutional Development and the Admissions Office so that correspondence could be initiated to apologize for an administrative error, and also, so that internal controls could be set up so that these kinds of mistakes would not be repeated in future years.

A factor that might be considered as contradictory to the economic pinch noted above was noted in the answers to a question designed to evaluate the effect of state tuition grant programs. Most of this "no-show" group had **not** applied for a state grant and of those who had applied, only one out of eight had received a grant. The same ratio of acceptance noted for students who lived within the state of Iowa and for students who lived outside the State. Since state tuition programs are typically geared to provide assistance to students from low-income families, the economic pinch may still be a very real one for middle-income families since students from such families are typically not eligible for scholarship or loan assistance in meeting higher education costs.

A final factor of major significance to the University was the fact that only six of the 124 students had attended one of the Summer Orientation Programs for new students during the summer of 1969. This Program, which was in its third year in 1969, is designed to bring to the campus during the summer, groups of approximately 100 each to ten identical sessions. The parents of new students are encouraged to attend and our experience has been that we have nearly one parent for every new student attending the Summer Orientation Program. The fact that this group, which had applied for admission and had been notified of acceptance before the Summer Orientation Programs began, had almost universally chosen not to attend the Summer Orientation Program, suggested a recommendation to our Admissions Office that a more intensive follow-up be made of prospective students, especially those who have indicated that they will not attend the Summer Orientation Program, or who fail to attend after having made reservations. Since the University is limited in terms of the number of new students it can recruit because of limited student housing, the University in 1970 is pursuing both a better follow-up of "no-shows" and is also accepting approximately 100 more new students than there is available housing, gambling that this will result in 100 per cent capacity use of our housing facilities as the fall semester 1970 begins. This particular factor had not been considered when the original study was conceived, but may turn out to be one of the most financially helpful consequences of the data received from this 1969 group.

III. A study was made in 1968 of freshmen during their second semester of study, to find out if they felt that what we had told them Drake was going to be like was actually the case now that they had experienced a full semester and part of a second. In addition, we were concerned about the adequacy of faculty advising and the use students made of various administrative and student personnel services. A questionnaire was distributed by means of campus mail, with appropriate follow-ups, as per above. Student assistants in the office made routine pick-ups at each of the dormitories for questionnaires and for those from whom questionnaires had not been received made personal contacts to encourage participation. The on-campus returns, plus the mail returned from students living in the community, produced an 85 per cent return.

In addition to rejecting the hypothesis mentioned in II above, this survey provided a wealth of information about our freshman courses, and the services offered students. While there were, of course, some spots where remedial action was found to be necessary, the vast majority of the students reported that they were quite satisfied with what they had found at the University and were using services as they saw the need for them. As might be expected, we did identify a small number of faculty who did not seem to communicate effectively with freshmen students. The deans of the colleges to whom the basic reports were made adjusted schedules in some cases so that certain faculty advised only upper-division students, while some others who had good rapport with freshmen were given additional responsibilities in this area. Certain changes in the Student Personnel Office were also suggested, and it has been gratifying to me, personally, to see that there has been a follow-up with remedial action in these areas. The survey also pointed up the need of providing new students with a better description of the various services available on the campus. It found some students who were not aware of the fact that certain service functions were available to assist them. One, for example, was the Office of Student Placement, which provides assistance in finding part-time jobs for currently enrolled students, as well as interviews and assistance in terms of locating full-time jobs for those who are receiving degrees.

Perhaps the biggest and, again unexpected result of this particular kind of study, has been a reduction in student mortality among new freshmen students. The mortality figures for the University have been remarkably constant for about the past fifteen years, and I am happy to note that the percentage of students who do not continue to the second year has been reduced and, I trust will continue to be reduced in future years.

IV. The Office of Institutional Research has conducted two recent studies of "dropouts". A major report was distributed on campus in the fall of 1969, describing those undergraduate students who were enrolled as full-time students in the spring of 1968, who had not graduated, had not been dismissed, had not been "counselled out" by the Student Personnel Office, and yet had not returned for the fall of 1968. We had to learn the hard way that it is necessary in this type of research to canvass any and every source of information about students before a questionnaire is sent out. It is embarrassing to send out a questionnaire to a student asking why he is not enrolled for instruction and then to find out that he had been expelled by the dean of his college. Similarly, there is some "distress" within the office when a "dropout" is found to be pursuing work part-time in our University College or Evening Class Program.

There are 304 students in the 1968 dropout study, which was a 78 percent return of all of those contacted. Of the 304 who returned useful questionnaires, 195 were enrolled in another school or college, with 90 per cent of these enrolled in a state college or university. The 195 students were enrolled in 80 different colleges, ranging from the New England States to California, and from Washington to Florida. The largest number were naturally in the three state institutions in Iowa, but this was a distinct minority of the total group involved. The major reasons for students transferring to another institution could be categorized as falling into the following areas: 1) financial, 2) a need to get away from home and break family ties, 3) marriage (which included forty women and to my surprise eight men, who were married and found it necessary to work to support themselves and their wives), 4) a small number were serving in the Armed Services, and 5) a relatively small number who wanted a program of study not offered at Drake, i.e., engineering, nursing, physical therapy, etc.

The general reaction of the students who had dropped out of Drake was a favorable reaction or evaluation of the kind of education and services that they had received on campus. There were many who had indicated that they wished they had been able to continue at Drake, but that tuition costs forced them to move closer to home, or to a school with a lower tuition. Such results are almost inevitable for a private school with limited endowment that is attempting to be competitive in terms of faculty salary, administrative services, and a reduction in student-faculty ratios.

V. The Office of Institutional Research has conducted a variety of testing programs involving graduating seniors. These programs are worked out with the Council of Deans and letters "inviting" students to participate are always mailed to the students from the deans of their respective colleges. The participation has been extremely good, averaging about 95 per cent of all those contacted.

The tests have generally been of two kinds. For the past two years the office has assisted the College of Liberal Arts in gathering data on achievement of their students in various major fields, using the GRE Advanced Tests (until these were withdrawn from institutional research programs) and the subsequent Undergraduate Record Exam Field Tests. Students participating in the program are sent a copy of their Score Report furnished the University by Educational Testing Service, together with comparative data so that they themselves can see how well they did as compared with other Drake seniors and with seniors in the ETS norm group. Local norms have been developed and will be expanded as each successive class participates in this testing program, using the subject matter test or Field Test of the URE Program.

The second type of senior testing has involved questionnaire instruments. This year's program unfortunately met with disaster because of the outbreaks of student unrest, for we had scheduled the program for May 5th and 6th, probably the two worst days for asking seniors to participate in a questionnaire study. In previous years, however, these programs have been extremely valuable in providing a variety of information for local consumption. We have used the CSQ-2 Tests in order to obtain data about student attitudes and plans, and thus make comparisons with national or standardized norms. We have also developed local questionnaires, with which we have attempted to have students evaluate the student services available to them, the quality of instruction in their major field and in the University in general, and other aspects of University life that they have experienced. We included a page on which we have asked the seniors to name the two instructors they thought were the best that they had had during their stay at Drake. In addition to naming these two people, we asked them to indicate specifically why these two stood out above the other instructors they had studied with at Drake. The page on which these responses were gathered had only the basic directions and then space for the naming of the two instructors and for reasons. These data were then Xeroxed and copies of the actual comments of the students were sent to the dean of the college in which each instructor performed his teaching duties. Tabulations of total responses have been made and reported to the central administration as well as to the deans of the colleges. Again, I had to learn the hard way, for I had one dean who misunderstood completely the nature of the data sent to him and reduced a promised raise of $1,100 to a certain professor by $1,000 after finding that he was "ranked" as sixth out of eight members in one of our smaller colleges. After the instructor had descended on my office with blood in his eyes, having been told that the action had been made because of data supplied by me, I found it necessary to again convene a meeting of the deans and explain as carefully as I could that this was not a ranking per se. I pointed out what they should have known, and most did, that some professors meet relatively few students and therefore will probably be named by relatively few in this kind of questionnaire approach. A professor teaching an advanced Chemistry course where he is responsible not only for the lecture but for a lab would meet fewer students than would a professor of History responsible for a large lecture section, or an instructor responsible for the introductory lectures in our freshmen Biology course. Notwithstanding this crisis which was resolved successfully, these data have been found to be most useful for the deans in pointing out to them which of their faculty have been recognized by students as doing an outstanding job of teaching. The office has made no comment about how deans might evaluate teachers who meet many students and yet are never mentioned by seniors as being among the best that they have had during their stay on campus. I have assumed that they have drawn appropriate conclusions about this group, although I would stress that I have always phrased the question to students in a positive manner, asking who they would name as the best instructor. Despite this, I typically get a number of comments about the **worst** instructor that a particular student had and **why**. These data again, are sent directly to the dean for his use in an overall evaluation of faculty contributions. I should stress that these kinds of data are but one of the many that the deans should have in evaluating the total effectiveness of their faculty.

The typical questionnaire I have used in this area has included a page on which I have simply asked students to comment about anything and everything that has not been covered in one of the checklists or specific questions and which they think would make Drake a better university. Our office prepares a summary of the comments, which happily, fall into rough categories dealing with instruction, facilities, costs, etc. These are circulated to all deans and other administrative personnel within the University who have need for them. In addition, a Xerox copy of the full text of what the students have submitted to us is sent to the President's office so that he can read exactly what our graduating seniors have to say about the University.

VI. We have conducted three follow-up studies of the last three graduating classes, including all persons receiving baccalaureate degrees in the January, June and August commencements of each year. The typical rate of return from these studies, which are usually begun with the mailing of questionnaires in mid-October, is approximately 80 per cent. These graduate follow-up studies are quite different from the kind of study that you will hear about from Bob Pace and also are different from the typical follow-up of graduates five or ten years after graduation. Since these studies are begun in October immediately following graduation, one important purpose is to collect data dealing with migration of students, that is, the number of Iowa students who locate outside of Iowa, or the number of non-resident students who begin their first employment or graduate study in Iowa. We gather information about the types of employment students report as of October 15th, and also the number and percentage of baccalaureate graduates who go on for graduate or professional school study. We also have determined from these annual surveys the number of graduates who go into elementary or secondary school teaching, who get married and are not employed, and those enter the Armed Services. I will not take time to report on any of the details except to say that these kinds of data about our most recent graduates have proved to be of great value for various offices on our campus. No attempt has been made to "pretty them up" so that they will be acceptable for publication in a professional journal. The studies are designed strictly to provide the campus offices with as much information as possible about the most recent graduating class. Studies of the type that Bob Pace will be reporting about when I finish are planned for the future but have not been done at Drake in recent years.

We have also asked our recent graduates to rate the administrative and student personnel services available to them while they were on the Drake campus and also certain administrative and academic policies that they have "lived through". We have also asked them to name the two outstanding instructors they had studied with, knowing full well that most of those responding to the questionnaire had done the same kind of evaluation in the waning months of their senior year. It has been interesting to see some changes that occur as students get a broader perspective of their academic experiences. Of equal value, however, has been the constancy of response for outstanding personnel, which might be even construed to be a measure of reliability of the instrument, if one were searching for a technical or scientific rationale for this kind of survey approach. The graduate follow-up always contains a final page on which I have asked them to comment freely about any aspect of the University that they think would make Drake a better university. About 90 percent of the students do take advantage of this opportunity to discuss their experiences, either positively or negatively, and to offer suggestions for needed change. These data are summarized by the office and distributed for the attention of deans and other academic administrators, and usually are discussed intensively in summer administrative retreats.

While I would be the first to say that not everybody loves us, even though they have received a degree from Drake, most of the comments are very favorable and are reassuring to those who are concerned about the kinds of educational experiences that our students wish to have. How these same students would respond five or ten years later, is an open question. Again, I would say that the studies we have made of recent graduates are relatively unsophisticated surveys and provide immediate response for analysis and discussion among the University community. There are obvious weaknesses in this kind of research and I am anxious that we pursue very soon, the kind of study that Bob Pace has become famous for, and which I was fortunate to conduct under his supervision while a graduate student at Syracuse University as a part of the All-University Self-Survey in 1948-49.

Briefly, what I have described to you, are a variety of follow-up studies of various publics, or groups of students as I have defined them, at various stages in their academic careers, ranging from students who have not yet set foot on the campus to those who have left with bachelor's degrees. The questionnaire approach and the method of reporting are not sophisticated and are intended to provide the University community with basic data about various student groups. The kinds of responses we have received and the thoughtful and careful attention given to these questionnaires by an overwhelming majority of those contacted prompts me to recommend this as a most important area of concern for institutional research offices in helping the campus at large to get a better picture of how the academic, administrative, and service functions of the University are received and evaluated by those who use them, the University student.

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RESEARCH METHODS FOR CONDUCTING FOLLOW-UP STUDIES IN HIGHER EDUCATION

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INTRODUCTION

The emerging discipline of institutional research is receiving noticeable attention through reports published in journals, dissertations, ERIC documents and the like. With the increased awareness of the discipline and the improved communication among institutional researchers through various means of publications, not only is it timely to assess the state of the art of institutional research methodology, but also, to place some judgment concerning the quality of research methods used in conducting institutional research. An assessment of methods used in institutional research at this early stage of development may well prove worthwhile in strengthening the state of the art and in establishing common bases for comparability and replication of important studies in higher education. Such a consequence would also enhance the institutional research reports to administrators for decision-making purposes.

PROBLEM

This report is based upon the assumption that most institutional research studies are conducted in a provincial manner directed toward providing information limited to a particular institution. This procedure in effect restricts inferences made and the ability for comparable institutions to replicate similar studies and expand their frame of inference. The problem which exists, therefore, is that of established research methods, such as, those used in the behavioral sciences which have not been widely applied to the problems in institutional research.

OBJECTIVES

The field of institutional research extends to all phases of activities associated with institutions of higher education. Traditionally, components of institutional research have centered around students, faculty, space, fiscal matters, and physical facilities. The area of concern in this report relates to student studies – and specifically follow-up studies in higher education. Specific objectives for conducting the analysis were: 1) To examine strengths and weaknesses of the research methods used in reports on follow-up studies in higher education, and 2) to develop a set of guidelines for conducting follow-up studies to be used by institutional researchers.

PROCEDURES

Selection of Reports on Follow-Up Studies in Higher Education. A careful examination of the **Education Index**, ERIC publications from July 1964 to date and card catalogue files revealed 95 reports with titles relating to the general category "Follow-Up Studies in Higher Education". These 95 reports were located in 62 journal articles, 14 dissertations, and 19 ERIC documents. Eighteen of the references could not be located. After examining those reports available it was revealed that only 47 of the reports were actually follow-up studies in higher education. The 30 reports which were not directly related to follow-up studies in higher education were concerned with literature surveys, with studies dealing with high school students, or with surveys of enrollees who were in active student status. All of these were excluded from the analysis of this report.

Criteria Used for Analysis. The criteria used to judge the reports of follow-up studies in higher education were obtained from Strauss (1969).[1] Others have presented guidelines for evaluating educational research reports Bixler, 1928,[2] Dvorak, 1956,[3] Farquhar and Krumboltz, 1959,[4] Johnson, 1957,[5] Stephens, 1967,[6] Symonds, 1956,[7] and Wandt and others,1967.[8] Strauss, however, presented 20 criteria which can be applied very easily to judge reports on educational research. The 20 criteria presented by Strauss do not give a "best fit" to institutional research reports, but the 20 criteria were used here because they can easily be adapted to institutional research reports without losing sight of the need for better methods in conducting institutional research studies. The 20 criteria suggested by Strauss for evaluating educational research reports are: Problem raised, previous work cited, objectives stated, hypotheses formulated, assumptions made, population studied, sample drawn, instruments used, design examined, procedure followed, safeguards taken, observations recorded, findings assembled, statistics interpreted, interpretations discussed, conclusions reached, limitations recognized, further work projected, improvements suggested, and clarity of report. The author of these guidelines, Strauss, recognized full well that the criteria were developed to evaluate experimental research reports in education.

The analytical procedures used in this report are limited to the follow-up studies identified for analysis and the 20 criteria judiciously chosen as a framework for judgment of the reports.

The actual procedures for evaluating the research methods reported in the selected follow-up studies in higher education consisted of careful comparison of the studies with the 20 criteria and recording whether or not each report met the criteria. To some degree the accuracy and completeness of the information reported in each study was judged.

FINDINGS

Applying Strauss's 20 criteria for evaluating educational research methods to selected reports of follow-up studies in higher education the following judgments were reached by this writer:

1. Nearly all (91 percent) of the follow-up studies stated a problem in their reports; 9 percent did not have a statement of the problem. Of the 91 percent of the studies with statements of the problem, nearly half (46 percent) of the statements were clearly

identified, but 47 percent of the problem statements had to be searched for.

2. Citations of previous work in the follow-up studies were well formulated and related to the current problem in 22 percent of the reports; 48 percent gave very brief citations of previous work; 12 percent gave brief but improper citations; and 18 per cent of the follow-up studies cited no previous work.
3. Nearly three-fourths (72 percent) of the follow-up studies contained specific objectives, while 28 percent of the reports contained no statement of objectives.
4. Only a few of the follow-up studies were constructed in a manner to test research hypotheses (9 percent).
5. Over one-half (64 percent) of the follow-up studies made assumptions concerning their research, and 36 percent reported assumptions which identified samples, instruments, and the like which could not be controlled.
6. Nearly all of the follow-up studies (99 percent) described the population used in their studies.
7. Nearly one-fourth of the studies (24 percent) chose samples to use in follow-up (9 percent random, 15 percent other), while 76 percent chose to follow-up the entire population.
8. Nearly three-fourths (74 percent) of the follow-up studies used questionnaires to collect data. Of these, 85 percent described the questionnaire in detail, the other 15 percent only mentioned that a questionnaire was used. Other means for collecting data included personal interviews (6 percent), records and transcripts (6 percent), standardized tests (3 percent), and 11 percent of the reports did not mention how the data were collected in their follow-up studies.
9. Description of the statistical design used in the follow-up studies was identified in only 21 percent of the reports; 79 percent did not indicate how the follow-up data were to be treated.
10. Nearly one-half (44 percent) of the reports indicated that clear and logical procedures were to be followed; 26 percent of the reports indicated procedures which could have been better organized; 15 percent of the reports indicated incomplete procedures; and 15 percent of the reports did not indicate any procedures to be followed.
11. Over three-fourths (76 percent) of the follow-up studies did not report any safeguards taken to control errors, while 18 percent used statistical methods to control bias errors, and 6 percent used sampling techniques to control bias which could enter into the findings of the follow-up study.
12. Only one-fourth (24 percent) of the follow-up studies reported primary sources of data or test scores, ratings, replies to questionnaires used, etc., and 76 percent of the reports did not report any primary sources of replies or responses.
13. Nearly all of the reports (97 percent) presented the findings of the follow-up studies in clear and well organized tables, only 3 percent of the reports lacked a clear presentation of the findings of their follow-up.
14. The types of statistics reported in the follow-up studies were primarily percents (52 percent) and sum of responses (36 percent). Other types of statistics reported included ratios, range, chi-square, correlations, and analysis of covariance statistics.
15. Over one-half (61 percent) of the follow-up studies presented complete and accurate interpretations of their findings; 9 percent presented inaccurate inferences; and 30 percent gave only limited interpretations of their findings.
16. Almost all of the follow-up studies (90 percent) came to some type of conclusions, while 10 percent did not conclude anything from their study.
17. About one-half (51 percent) of the follow-up studies recognized limitations of their reports, while 49 percent did not recognize any limitations to their study.
18. Over one-third (36 percent) of the reports projected the need for further study, while 64 percent did not project any need for further study of their problem.
19. Over three-fourths (88 percent) of the follow-up studies did not suggest any means for improvement, while 12 percent of the reports gave suggestions on how to improve their projects or the reporting procedures.
20. The follow-up studies were grouped into two categories in regard to the clarity of the report: Forty-three percent of the studies were rated good to excellent, and 57 percent were rated fair to poor in clarity.

DISCUSSION

The first point which should be revealed at this time is simply that Strauss' 20 criteria for evaluating educational research studies can be adapted to assess reports on follow-up studies in higher education as conducted in an institutional research context. Even though the nature of institutional research, as currently practiced, does not require the sophistication of research methods necessary for conducting experimental studies in education, most of these criteria were meaningful to the ordinary follow-up studies reported in the literature. The findings of this report, also, indicated that follow-up studies in higher education can be improved if certain guidelines are followed. The strengths of research methods revealed in the reports on follow-up studies in higher education appeared to be: 1) Statement of the problem, 2) previous work cited, 3) statement of objectives, 4) description and selection of the population, 5) assembling the findings, and 6) conclusions reached. Those criteria which could have been improved in the reports were: 1) Assumptions under which the follow-up was conducted, 2) field testing and validating of instruments used, 3) clarification of design used, 4) complete description of procedures followed, 5) safeguards taken to control error or bias, 6) recording of primary sources of data, 7) more refined statistics for strong and accurate inferences, 8) complete interpretations of findings in relation to the problems and objectives for conducting the follow-up, 9) recognition of limitations of the study, 10) constructive criticism of the study for further improvements, and 11) clearness of the writing and sound organization of the report.

The nature of a follow-up study in an institutional research setting and for meeting dissertation requirements are different. In an institutional research setting the need to conduct follow-up studies has not been comprehensive enough to require rigid experimental research methods. Usually, the need to conduct a follow-up study by institutional researchers has been to describe where graduates of a single institution have gone and offer simple descriptions of selected characteristics of these graduates after taking a degree. Also, it is more desirable to use the entire population in such a setting than to select a random sample. Academic deans usually desire to know where **all** of their graduates have gone and what they are doing in contrast to a selected sample.

For institutional researchers who are desirous of improving their research skills to strengthen approaches in conducting follow-up studies most large campuses contain many courses on statistics, research design, psychometric testing, and the like. The reports analyzed in this study, however, indicate that only a knowledge of descriptive statistics has been used in the past in conducting follow-up studies. As the discipline of institutional research matures it will be desirable to strengthen the inferential base of institutional data and this will require a higher level of knowledge and research skills. Finally, it is only a matter of time before a **Journal of Institutional Research** will be created. In order to support such a competitive journal it will be necessary to provide high quality reports.

From the findings of this report the writer would suggest that the following guidelines can be used to strengthen the conducting and reporting of follow-up studies in higher education. The guidelines should be used in preparing or structuring the follow-up study as well as in reporting purposes.

GUIDELINES FOR CONDUCTING FOLLOW-UP STUDIES IN HIGHER EDUCATION

1. STATEMENT OF THE PROBLEM. A problem may be stated in several different ways. A very desirable manner is to state the problem in question form which clearly explains what you are trying to determine. The question should be stated in clear and precise terms so that the remainder of the study will have a logical flow or syntax.
2. JUSTIFICATION FOR THE STUDY. Why is the problem one of significance? Evidence from previous studies and recommendations should be documented to support the need to study the problem as stated.
3. OBJECTIVES OF THE STUDY. The objectives should state the intent for doing the study and for attacking the problem. The statement of objectives, which originate from the problem, should be stated in clear, concise terms. Since follow-up studies are applied research by nature, it is infrequent that hypotheses are necessary to be stated, and; therefore, objectives may be divided into a primary or general level with specific or secondary sub-levels.
4. DELIMITATIONS OF THE STUDY. Follow-up studies have been delimited by nature of populations surveyed, questionnaires used, percent returns, type of data recorded, and the like. Because of the lack of very tight research controls, it is desirable to explain all the elements in the study which may bias the findings and restrict inferences of the interpretations and conclusions – such as validation of the instruments, population defined, sampling procedures, and statistical designs used. All of these should be made clear.
5. PROCEDURES. The procedures for conducting a follow-up study in higher education should be described completely in order that others may replicate the study or extend your research. These procedures should answer the question, "How did you do it?" and usually consist of:

a. **Population Defined**. The population should be described in complete detail – size, year of graduation, type, sex, and other basic characteristics.

b. **Sample Selected.** If a sample was selected from the population, how was it selected? Random, stratified-random, cluster, incidental, etc. The characteristics of the sample should also be completely defined.

c. **Data Collection and Measurement.** The techniques of how the data were collected and types of measurements recorded have usually received the most attention in conducting follow-up studies. Yet, very few persons have reported any field testing or validation attempts concerning questionnaires and interview techniques used. Relaxed approaches to gathering data by means of invalidated techniques results in data collected with inconsistencies and highly restrictive interpretations and inferences. An original questionnaire or interview technique should be developed upon sound theories and practices in psychometrics and field tested to the extent that these means will serve effectively to obtain desired information. Procedures involved to produce a valid questionnaire, interview technique, or any other means for data collection should be explained in detail. The nature of the data to be collected and measures recorded should be included in the description of the methods used in collecting data.

Occasionally, standardized tests are used in follow-up studies in higher education. The use of these tests should be justified, described, and properly acknowledged.

Methods for increasing the number of responses in follow-up studies in higher education are very important to describe. Some persons have experienced success in increasing the number of responses by additional mailings, phone calls, telegrams, and personal visits to the respondent's community.

d. **Plan of Data Analysis.** The plan of data analysis should be related to the statement of the problem and objectives. The statistical design should reveal the form in which the data are recorded and analyzed. Simple and robust designs are preferable to elaborate designs which attempt too much.

e. **Report of Findings.** The primary sources of data, such as replies to questionnaires, interviews, test scores, etc., should be recorded. These data sources would fit well into tables or appendices and provide other institutional researchers an opportunity to compare data between institutions.

The findings should also be summarized in table form, graphs, charts or the like. These presentations should be complete, well defined, and self-explanatory.

f. **Interpretation of the Findings.** The findings should be interpreted in relation to the problem and procedures used in the study. One might ask, "Is the relationship between the problem and procedures clear and consistent, so that the findings are valid?" An occasional inferential error identified in follow-up studies is to obtain a 50 percent return from a population or sample and make inferences about 100 percent of the population. Another shortcoming identified occasionally in reports on follow-up studies was to make judgments regarding significant differences without appropriate statistical designs. It is desirable to obtain all meaning possible from the findings within a useful reference for institutional decision-making and planning.

g. **Conclusions of the Study.** The conclusions of the study should be consistent with the findings or obtained results and in relation to the problem and objectives of the study. A serious problem arises when conclusions of the report are not warranted upon the bases of the findings.

h. **Limitations Recognized.** Every follow-up study in higher education will have limitations or weaknesses which may or may not be due to the investigator or unexpected events. Oftentimes unexpected events occur with the percent of responses, measurements used, design used, population, and the like. These limitations should be revealed so that the consumer will be aware.

i. **Recommendations for Further Study.** A well planned and executed study will usually arouse interest and challenge further study. Comments to improve further studies should be described in constructive criticisms.

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COMMUNICATING THROUGH STUDIES – ADMISSIONS STUDIES

THE UNIVERSITY AND THE SECONDARY SCHOOL: A STUDY OF ADMISSIONS VISITATIONS

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Colleges and universities spend an enormous amount of time and money on admissions visitations both within individual states and throughout the nation. These college representatives are there for many purposes – to recruit students for an institution, to interpret admissions policies and requirements to interested individuals, to discuss degree programs offered by their institution, or to act as public relations men for their respective institutions.

While the objectives of the visitation are based on the goals of the University, the visitation will also be a function of the number and kind of students that the institution is seeking to attract. Whatever the objectives of the visitation are, the need to evaluate the visitation adequately is of paramount importance. In spite of the fact that many universities evaluate their visitation programs, there is a dearth of published information regarding the admissions counselor's visitation.

Since the early 1950's the University of Buffalo maintained a relatively large staff of admissions counsellors to visit secondary schools in New York State and bordering regions of Pennsylvania, Massachusetts, New Jersey and the province of Ontario. Upon joining the State University of New York in 1962 visitations were reduced to New York State schools only. Although the units of the State University system utilize a common application form, each institution determines its own admissions requirements and its own policy toward secondary school visitation. The only limiting factor for the visitation program is the size of the admissions office travel budget. No coordination and practically no cooperation exist between units of the University. It was and to some degree still is possible to see ten to fifteen admissions counselors from various SUNY Units attending college day or night programs at individual schools, with each representative traveling independently to the next program in the state.

Until several years ago no real attempt was ever made by this institution to assess the value of the secondary school visit – either to the institution or to the applicant. Frequently the visitation schedule was arranged by the admissions office largely for its own ease of travel and not for the students. The same feeder schools were visited yearly with few new schools scheduled. Attempts were made to visit previously uncontacted schools or those schools having a large proportion of its applicants being denied admission. In spite of these changes there was very little effect in the number of applications or in the proportion being rejected.

In an attempt to assess the visitation program in a more objective manner, the admissions office at the Buffalo Center sent a questionnaire, in November 1967 to nearly 1,000 secondary schools in the state seeking the attitudes and opinions of the guidance personnel. Responses to the questionnaire were received from 67 percent of the secondary schools. The questionnaire had been sent to the Directors of Guidance with a cover letter explaining the purpose of the study and encouraging their cooperation. To facilitate the return, a pre-paid self-addressed envelope was enclosed for the convenience of the respondent as well as a postcard, which could be used to request a copy of the completed study. A followup reminder was sent to each school 30 days following the original mailing urging those who did not complete the questionnaire to do so at their convenience.

The number of visitations in the high schools by colleges and universities varies considerably. Only thirteen percent of the secondary schools reported fewer than ten college visitations while seventeen percent indicated visitations by more than fifty institutions. The majority of the high schools reported visits from ten to thirty institutions. In terms of time spent with institutional representatives, nearly two-thirds of the guidance counselors spent anywhere from one-half to a full hour with each college representative. For those schools receiving many visitations, a substantial amount of time is spent with the counselors and can seriously affect a counselor's heavy schedule.

Over 50 percent of the counselors deemed it necessary for a college to visit its school each year, while another 40 percent felt every other year would be sufficient.

Table I

Number of Visitations, Hours Conferring With Admissions Counselors, Length of Visitation, and Number Of Visitations Desired by High School Guidance Counselors

Item	Number	Per Cent
1. Number of Colleges and Universities Represented by Admissions Counselors Per Year		
Less Than 10	83	13.24
10 – 19	193	30.78
20 – 29	129	20.57
30 – 39	64	10.21
40 – 49	52	8.29
50 or More	106	16.91
Total	627	100.00

2. Total Number of Hours High School Guidance Staff Spends Conferring With Admissions Counselors		
Less Than 19 Hours	71	11.41
20 – 29 Hours	226	36.33
30 – 39 Hours	122	19.61
40 – 59 Hours	93	14.95
60 – 79 Hours	37	5.95
80 or More Hours	73	11.75
Total	622	100.00
3. Length of Visitation		
Less Than 30 Minutes	21	3.35
30 Minutes – 1 Hour	450	71.89
1 Hour – 2 Hours	151	24.12
Over 2 Hours	4	.64
Total	626	100.00
4. Respondents Preference As To How Often Visitations Should Take Place		
Every Year	339	54.77
Every Two Years	262	42.33
Every Three Years	14	2.26
Every Five Years	3	.48
Not At All	1	.16
Total	619	100.00

Since it is typically felt that college representatives spend a considerable portion of their year on recruiting trips, it is interesting to note that the guidance counselors perceived the admissions representatives as purveyors of information and as public relations men, rather than recruiters of students.

Table II

In Which Capacity Do You Primarily Envision The College Representative?

Capacity	SUNY Institutions	Private Institutions
Purveyors of Information	65%	58%
Public Relations Men	14	17
Educators	11	9
Recruiters	8	15
Waste of Time	2	1

Although the guidance counselor feels the visitation is of most value to the student, nearly 45 percent indicated that they gained the most in talking with the representative. This view is further substantiated by the fact that the counselor's best source of information about an institution's admissions policies is from the institutional representative and not from college catalogs or newsletters.

Table III

Opinions of Populations With Regard To The Admissions Visitation

Opinion	Number	Per Cent
1. Most Valuable Aspect of Admission Counselors Visitation		
Talking with the Guidance Counselor	227	44.46
Talking with the Students	336	53.93
Distribution of Materials (Catalogs, Applications, etc.)	0	.00
Other	10	1.61
Total	623	100.00
2. High School Guidance Counselors Best Source of Information about College and University Admissions Policies		
Newsletters	97	15.71
Admission Counselors Visitations	398	64.51
Alumni of the College or University	3	.49
Former Students Attending a College or University	19	3.08
Your own Records or Files	100	16.21
Total	617	100.00
3. Should High Schools Invite the Admissions Counselor rather than Admissions Counselor Invite Himself?		
Strongly Favor	78	12.81
Favor	140	22.99
Disfavor	296	48.60
Strongly Disfavor	95	15.60
Total	609	100.00

In an attempt to have the visit more beneficial to the students, the guidance counselors and the institutions of higher education it was suggested that the high schools might invite specific colleges to the school rather than rely on the college taking the initiative. The high school counselors rejected this concept by having nearly two-thirds indicate their reluctance to this plan. Such a plan would cut down on interviews which could be interpreted as a waste of time for the schools, students and colleges.

Each year colleges are invited to more and more college day or evening programs where students and/or parents can meet with representatives from many colleges to discuss admissions requirements or have their curiosities satisfied. Approximately one-fifth of the guidance counselors indicated this type of a program was more valuable than the isolated visit of a single college. On the other hand, 47 percent felt this type of a program had little or no value. This makes one wonder as to why these programs are expanded year after year if this is the general feeling.

Table IV

Opinions of Populations With Regard to Proposed Changes in Visitation Policies

Opinion	Number	Per Cent
1. Is the College Night (or Day) Type of Program of More Value Than the Admissions Counselor's Visitation?		
Of Much More Value	45	7.53
Of Somewhat More Value	87	14.55
About the Same	184	30.77
Of Little Value	237	39.63
Of No Value	45	7.52
Total	598	100.00
2. Value of Admissions Newsletter		
Very Helpful	285	45.67
Somewhat Helpful	277	44.39
Of Little Value	59	9.46
Completely Worthless	3	.48
Total	624	100.00
3. To What Extent Could the Newsletter Replace The Admissions Counselor's Visit?		
Most of the Time	45	7.21
Some of the Time	229	36.54
Seldom	226	36.21
None of the Time	94	20.04
Total	624	100.00
4. Feasibility of One Representative from Each Level in the SUNY System Visiting the High School		
Highly Feasible	152	24.47
Somewhat Feasible	141	22.71
Feasible	114	18.36
Not Feasible	214	34.46
Total	621	100.00
5. Reaction to the Incorporation of System Mentioned in Question 4		
Strongly Favor	114	18.60
Favor	199	32.46
Disapprove	216	35.24
Strongly Disapprove	84	13.70
Total	613	100.00
6. Reaction to the Use of a Movie or Television Tape Concerning Admissions Policies for SUNY System		
Very Desirable	271	43.64
Desirable	236	38.00
Undesirable	103	16.59
Highly Undesirable	11	1.77
Total	621	100.00
7. Could a Telephone Call from the Admissions Counselor Replace the Admissions Visitation?		
Yes	29	4.63
No	409	65.34
In Some Cases	188	30.03
Total	626	100.00
8. Reaction to the Incorporation of System Mentioned in Question 7		
Strongly Favor	18	2.95
Favor	111	18.20
Disfavor	328	53.77
Strongly Disfavor	153	25.08
Total	610	100.00

As an alternative to the actual visit by individual institutions of higher education, it was suggested that perhaps expanded newsletters or telephone calls could replace the visit. Nearly 43 percent of the counselors indicated there was some merit in relying on the newsletter, but only 5 percent had confidence in the telephone call. Another alternative which fifty percent of the counselors felt workable was having an admissions counselor represent similar units of the State University. For example one man could represent all the University Centers since they are similar in admissions requirements. Another plan which seemed to gain considerable acceptance with the guidance counselors was to use a movie or have a television program on the admissions requirements for the units in the SUNY system. Over four-fifths, acknowledged the merit of this plan.

In spite of all the comments for and against the concept of secondary school visitation by the many colleges and universities, only 2 percent of these objected to the visitations;

the remaining 98 percent readily approved it. For those counselors who approved of the admissions counselor's visitation their primary reasons for approving the visit are listed in Table V.

Table V

Reasons For Approving The Visitation Policy (1st Choice Being Valued Highly, 5th Choice Valued Low)

Reasons:

A. The visitation is an educational experience for the students.

B. The visitation provides a personal touch with a university for the guidance counselor.

C. The visitation is a way of obtaining information about individual colleges and universities.

D. The visitation is an educational experience for the guidance counselor.

E. The visitation provides a "contact" with a college or university.

Reason	1st Choice	2nd Choice	3rd Choice	4th Choice	5th Choice
A.	51%	21%	21%	4%	7%
B.	26	22	29	14	12
C.	10	25	26	20	19
D.	6	25	16	27	21
E.	7	7	8	35	41
Total	100%	100%	100%	100%	100%

Nearly 51 percent indicated their chief reason for approving the visitation was because of the educational benefits which the students received from the program. The second most frequent first choice reply was that the visitation was a major way for the counselor to have a personal touch with the university. The second choice reply was almost evenly divided between alternatives A through D. Items C and D each received 25 percent of the replies. Evidently the counselors felt the acquisition of information was valuable and also that they too learned something from the presentation. The third choice, and 29 percent indicated it, was that the visitation gave the counselor a personal touch with the institution. The fourth and fifth choices both indicated a plurality for the fact that the visitation gives the counselor a "contact" with the university. The results clearly show that the counselors are most interested in the welfare of the student, interested in obtaining information themselves about given institutions and least concerned with having a contact at a college or university.

The results of the study indicated that the tradition bound visitation program was certainly worth questioning in view of its ever increasing costs and questionable benefits. After experimenting with a limited visitation program during the 1968-69 academic year and increased useage of newsletters and telephone calls as well as cooperative institution program with other units of the SUNY system, it was decided to eliminate all visits during the 1969-70 academic year. When guidance personnel were notified that the University would not visit the schools or attend college night programs, practically no negative responses were received from the high schools. Thus far more applicants have visited the campus and applications have increased by nearly 30 percent in the last two years. As of the first of April the University has received over 15,000 applications for a freshman class of 1,850 students and a transfer population of 1,100 students.

Next month the Admissions and Records Office at Buffalo intends to contact every secondary school in New York State and ask them to evaluate our program of non-visitation. While the possibility of ever re-adopting an extensive visitation program appears to be most remote due to declining budgetary support, this institution will try to assess its position and perhaps try different techniques if they appear to be warranted.

With ever increasing costs for institutions of higher education there exists an urgent need to assess its financial position so as to maximise its effectiveness with a minimum of cost. For years colleges have carried out extensive visitation programs – most for the chief purpose of recruiting students. The recruiting of students can be extremely expensive for all institutions – those seeking students from a small pool of applicants or even those seeking students from a huge pool of exceptionally well qualified applicants. Many colleges have visited high schools only to arrive and speak with practically no students or with poorly screened students. At times they have been baby sitters for study halls. Oftentimes many schools will not permit their students to leave their classes to speak with college representatives during the school day. College nights have expanded to the point of overlaping and reducing an effectiveness which they might have had.

In view of the fact that many guidance counselors readily question the worth of extensive visitation programs and appear willing to accept different techniques as a substitute to the visitation it is up to the institutions of higher education to analyze their position from their vantage point. All too often the examination will be based on economic rather than on educational reasons, but colleges are rapidly approaching the decision point. Certainly as more and more people in this country demand access to higher education, expansion of visitation programs cannot be economically justified when we are currently faced with more limited budgets and more increased demands on overworked staff. The whole concept of Open Admissions or Full Opportunity Programs will certainly force an assessment of the visitation program.

I fully recognize that our admissions situation at Buffalo is not typical of all colleges in this country – either public or private but I must submit that each institution must examine its position on visitation with respect to conditions on its campus. Many institutions might find it extremely difficult to justify "recruitment" when it is overwhelmed with qualified applicants or on the otherhand, extensive recruitment is mandated in order to fill the student quota. I submit that a careful evaluation of this type of program is necessary for all institutions and that the benefits which can be obtained from this type of self-analysis can be surprising.

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THE OBSOLESCENCE AND REPLACEMENT OF COLLEGE ADMISSIONS CRITERIA

Irving Cohen
Borough of Manhattan Community College

Repeated studies of correlation between traditional college admissions criteria and academic success at the Borough of Manhattan Community College reveal only weak and tenuous association. On the average, coefficients of correlation cluster about 0.4 for high school averages and 0.2 for both verbal and mathematical SAT scores.

These results, at a minimum, focus on the need to re-examine these criteria. They raise significant issues. How valid are these criteria in terms of the current educational scene, the present student body, faculty, administration and social attitudes towards and expectations from "education"? Questions are raised about the very system of values inherent in the traditional standards. Should the college selection process emphasize the picking of students by scoreboard? Has the grading system, itself, been downgraded under changing social and educational pressures? Can non-academic criteria, building on other values, contribute more towards a useful selection process than the present tradition-bound judgments?

A value system based on identifying **those students who can benefit most from a college education** opens the possibility of developing other-than-traditional criteria that may replace or supplement existing admissions considerations. To test the validity of this approach and to establish a basis for future explorations, the BMCC Office of Institutional Research undertook an intensive, statistical longitudinal and cross-section analysis of over 800 freshmen who entered BMCC in the fall of 1968. Each of these students filled out a three-page questionnaire requesting information on personal and family characteristics, academic goals, work experience, income and related socioeconomic data. Eight hundred and eleven questionnaires were returned. Their content and the scholastic record of these students formed the basis of the statistical research.

Fourteen non-traditional, objective factors, capable of admissions office manipulation, were selected for examination as possible candidates for admissions criteria. These included: 1) Time lag between high school graduation and first entry into college, 2) family income level, 3) number of languages spoken at home, 4) marital status, 5) age level, 6) education of father, 7) education of mother, 8) number of siblings in school, 9) veteran status, 10) country of origin, 11) type of high school diploma, 12) work experience, 13) family dwelling, and 14) residential area. Each of these characteristics was tested for association with academic achievement.

In order to evaluate the applicability of this as well as of previous research to other campuses, a brief description of the BMCC student may be in order. BMCC is a subway college occupying space in two skyscraper buildings in the heart of the commercial and theatrical district of Manhattan. All students commute. About 40 percent live in the borough of Manhattan and approximately one-third each of the remaining 60 percent live in the borough of Bronx, Brooklyn and Queens. At least half of the students are of minority ethnic or cultural origin, roughly equally divided between blacks and/or Spanish speaking background. Half of all students live in officially designated poverty areas. One in six are enrolled in special programs for disadvantaged students.

Women comprise over half of the entire student body. Half of the matriculated students are in senior college transfer programs and the other half are either in business or health career technology programs. Less than three out of five have academic high school diplomas. The average high school average for the fall 1968 entry student, who was not in a special program was 79.0; the average verbal SAT score was 421 and the average mathematics SAT score was 440. The average age of all incoming freshmen in this semester was 18.9 years. The average (mean) annual income of the families of these students was $6,517. There was a $1,500 difference in average income between families living in poverty areas (mean: $5,724) and families from nonpoverty areas (mean $7,223). Three-fifths of all families had incomes below $7,000 and only one-eighth had incomes surpassing $10,000. Upon graduation, approximately two-thirds of all graduates go on to four year colleges (this cuts across all curricula) and one-third seek full-time employment (most of these continue education on a part-time basis).

Before testing the suggested new criteria and to assess the validity of the sampling, correlation ratios were computed for the high school averages and SAT scores of the fall 1968 freshmen and academic achievement upon the completion of their third semester. The coefficient of correlation for high school average and cumulative GPA at the end of the fall 1969 term was .276, for verbal SAT scores and GPA, .133 and for mathematical SAT scores and GPA, .171. These were between one-third and one-half less than the association for the average BMCC graduate.

The fall 1968 entrants were also examined for survival characteristics. Two very distinct patterns emerged. Students who dropped out at the end of the first semester had higher high school averages than those who left at the end of the second. Those who survived to the third term had superior averages to both. This pattern was completely reversed for SAT scores (both verbal and mathematical). Second semester drop outs had better scores than first semester leavers but those who survived to the third semester had the lowest scores of all. Both patterns applied equally to male, female, poverty area and nonpoverty area students. These data are summarized in the Statistical Appendix I. Evidentally, current admissions criteria are also of indifferent value in predicting length of student survival.

Some of the data developed in the study ran contrary to normally accepted viewpoints while others were more in line with a priori reasoning. The findings can be usefully summarized in terms of the various factors analyzed.

1. **Time lag between high school graduation and first entry into college**: The most productive academic results were

achieved by students who had been out of high school between two and five years before entering college. Their scholastic average was equal to or higher than those who went directly from high school to college. There were two pronounced curves in the graph of achievement. The GPA level for those students with a time lag of 6 months to two years fell below the level of the immediate entrants followed by a rise for the two to five year group, winding up with a precipitious drop for those who waited five years or more.

These averages and the supporting data for the other factors are included in the Statistical Appendix II.

2. **Family income level**: The highest GPA's were achieved by students coming from families with annual incomes between $9,000 and $10,000 and $5,000 through $8,000. The student coming from families with incomes of less than $5,000 a year seemed to have had greater academic difficulty. What was most interesting was the sharp decline in academic achievement for those who came from the more "affluential" families with $10,000 per annum or more. There was a 13 percent drop in GPA level between the $9 - 10,000 group and the $10,000 and over group.

3. **Number of languages spoken at home**: There was a direct and positive association between multilingual homes and academic achievement. The increase in level of GPA seemed to rise almost geometrically as the number of languages spoken at home increased. There was a 6 percent rise in GPA for the two-language home over the one-language and a further 6 percent for the three-language over the two-language domicile. The rate of increase jumped to 20 percent for the four-language over the three-language family. The GPA level for the four-language home stood 35 percent higher than the one-language.

4. **Marital status:** The married student did substantially better than the unmarried. Among the regular students, the married students had an average GPA of 3.59 against 2.22 for the unmarried. Comparable figures for the student in the special programs were 1.79 for married and 1.63 for the unmarried.

5. **Age level:** The association between age level and GPA was weak; the coefficient of correlation amounted to .21. The age distribution, however, showed interesting variation. The most productive ages were between 21 and 25 years, correlating roughly with the most productive time lag between high school graduation and college entry. After age 30, decline in GPA level set in and fell sharply for the 35 and over age group.

6-7. **Education of parents**: In the main, there was a positive association between parental education and offspring achievement. There were, however, a number of curious results. There was a definite sag in GPA level for students whose mother and father had only high school education. For the student whose father had high school training, there was a 1 percent decline in GPA level below the student whose father had only finished grammar school. There was a 14 percent decline for the student whose mother had completed high school. While students with college level parents had the highest scholastic averages, there was a marked decline where the father had college post-graduate work and a marked improvement where the mother trained beyond college.

8. **Number of siblings in school**: Three-fourths of the students had siblings who were still in school. Those with brothers and sisters also in school had a slight edge over the ones who did not. There was a sharp cleavage in this regard between regular and special program students. The regular students with siblings did not do as well as those without while the students in special programs did better when there were other family members in school.

9. **Veteran status:** Since veterans comprise just over 1 percent of total student body, the sample is too small for significant inference. Whatever data are available indicate that veterans who are regular students did somewhat better than non-veterans while the veteran in the special programs did not fare as well as his peers.

10. **Country of origin**: As a group, the foreign-born student did not achieve as highly as the native-born. The foreign-born in the special program did substantially better than the other students in these programs; his GPA level was 11 percent above the level of this group.

11. **Type of high school diploma**: Students who possessed academic diplomas did substantially better than those without this type of certificate.

12. **Work experience**: Students who had to work did not do as well as those who did not. The slippage was greater among regular students than among the students in special programs.

13. **Family dwelling**: Over 90 percent of all students attending BMCC live with either parents or guardians. Less than 5 percent either live alone or with roommates. Numerically, the sampling was too small to make any confident inference. For the married student, the results have been indicated.

14. **Residential area characteristics**: There was a differential pattern in the scholastic achievement of poverty area students. At the end of their first semester, the GPA level of poverty area residents was approximately 9 percent below the level of nonpoverty area students. Over one-fourth of poverty residents were subject to academic dismissal and/or probation as opposed to one-fifth for nonpoverty. The rate of withdrawal among these poorer students was roughly two-thirds higher than the nonpoverty area rate. There were pockets of achievement among specific nonpoverty students that significantly surpassed the average student performance.

These findings yield encouragement for further study and exploration. Some of the results challenge the accepted modes of thinking about academic and student behavior.

Of the fourteen criteria, there seems to be direct and positive association between scholastic averages achieved and the number of languages spoken at home, marital status, siblings attending school and the holding of academic diplomas.

There is evidence of differentiated association among four of the more challenging criteria examined: Time lag between high school graduation and college entry, age level, family income level and the education of parents. Time lag has two points of high association (immediate entrance and a wait of two to five years) and two low points (waits of 6 months to 2 years and, particularly, of five years or more). Productive age levels seem to rise to a high point of 21 to 25 years and then decline at an accelerated rate. Below the minimum family income level of approximately $5,000 a year, student performance lags but turns into a steady rise in achievement as income expands. Another turning point is reached at the $10,000 per annum and over level at which a sharp drop in performance takes place. The failure of students whose parents had finished their schooling with high school to achieve the same level of performance as students whose parents had only completed grade school is interesting. The falling off in achievement among the children of fathers with post-graduate training is also worthy of note.

The association among the other criteria is either weak or negative (working students and foreign born) or the samples available are too small for significant inference (veteran status and family dwelling).

There is nothing really new about the use of non-academic standards for admissions purposes. Colleges have bent their criteria for years in order to accommodate special interest groups. Preferences have been given to the children of alumni or on the basis of trustee pressure, religious and/or social affiliation, monetary donations, etc.

The examined criteria are designed to formalize pertinent and objective conditions for the selection of students who are in greatest need of higher education and who can benefit most from a college education.

STATISTICAL APPENDIX I

AVERAGE HIGH SCHOOL AVERAGES AND AVERAGE SAT SCORES, BMCC FALL 1968 ENTRY FRESHMEN, BY SEMESTER OF ATTENDANCE

	Semesters of Attendance			
Type of Student	Fall 1968 Only	Fall 1968 & Spring 1969	Fall 1968, Spring 1969, & Fall 1969	Total No. of Student Respondents
		AVERAGE HIGH SCHOOL AVERAGE		
All Students	77.7	77.2	78.7	780
All Male Students	76.6	75.6	77.1	262
All Female Students	78.3	78.1	79.4	518
Poverty Area Students	77.3	77.0	78.7	353
Nonpoverty Area Students	78.1	77.4	78.7	427
		AVERAGE VERBAL SAT SCORES		
All Students	418	436	398	477
All Male Students	437	442	408	163
All Female Students	403	432	393	314
Poverty Area Students	407	419	371	216
Nonpoverty Area Students	429	449	421	261
		AVERAGE MATHEMATICS SAT SCORES		
All Students	434	452	417	477
All Male Students	470	493	450	163
All Female Students	405	425	401	314
Poverty Area Students	435	438	392	216
Nonpoverty Area Students	433	463	438	261

STATISTICAL APPENDIX II

CUMULATIVE AVERAGE SCHOLASTIC INDEXES ACHIEVED BY BMCC FALL 1968 ENTRY FRESHMEN, BY SELECTED ACTIVITY AND CHARACTERISTIC FALL 1968 THROUGH FALL 1969 SEMESTERS

	Scholastic Index			
Characteristic	Total Student Body	Regular Students	Special Program Students	Total No. of Student Respondents
Time Lag Between H. S. Graduation and College Entry				
3 months	2.13	2.21	1.58	673
3 to 6 months	2.07	2.38	1.04	17
6 months to 1 year	1.95	2.71	1.81	25
1 to 2 years	1.60	2.46	1.51	10
2 to 5 years	2.14	2.60	1.91	12
5 years and over	1.49	1.34	1.53	18
Family Annual Income Level				
Under $3,000	1.81	1.98	1.47	76
3,000 – 4,999	1.81	1.97	1.53	184
5,000 – 6,999	2.21	2.31	1.78	196
7,000 – 7,999	2.28	2.37	1.77	92
8,000 – 8,999	2.16	2.17	1.98	73
9,000 – 9,999	2.38	2.45	1.95	38
10,000 and over	2.07	2.06	2.55	89
Number of Languages Spoken at Home				
One language	2.02	2.17	1.60	403
Two languages	2.14	2.23	1.73	353
Three languages	2.27	2.46	0.96	23
Four languages	2.72	2.72	–	6
Marital Status				
Married	2.16	3.59	1.79	33
Not married	2.10	2.22	1.63	750
Age Level				
16 to 19 years	2.11	N.C.	N.C.	593
19 and 20 years	2.06	N.C.	N.C.	155
21 to 25 years	2.19	N.C.	N.C.	27
25 to 30 years	2.12	N.C.	N.C.	6
30 to 35 years	2.06	N.C.	N.C.	12
35 years and over	1.94	N.C.	N.C.	10
Education of Father				
Up to 6th grade	1.98	2.08	1.69	108
7th or 8th grade	2.08	2.26	1.59	177
High School	2.06	2.15	1.59	380
College	2.35	2.42	1.94	68
Post-graduate	2.11	2.05	2.32	16

N.C. – Not Computed

Continued on next page

STATISTICAL APPENDIX II – Continued

CUMULATIVE AVERAGE SCHOLASTIC INDEXES ACHIEVED BY BMCC FALL 1968 ENTRY FRESHMEN, BY SELECTED ACTIVITY AND CHARACTERISTIC FALL 1968 THROUGH FALL 1969 SEMESTERS

	Scholastic Index			
Characteristic	Total Student Body	Regular Students	Special Program Students	Total No. of Student Respondents
Education of Mother				
Up to 6th grade	2.00	2.07	1.75	106
7th or 8th grade	2.06	2.23	1.57	148
High School	1.78	1.81	1.63	551
College	2.14	2.23	1.59	42
Post-graduate	2.25	2.32	2.01	9
Siblings in School				
With siblings in school	2.10	2.21	1.69	592
Without siblings in school	2.08	2.26	1.44	188
Country of Origin				
Foreign born	2.03	2.10	1.81	172
Native born	2.10	2.22	1.63	580
Type of Diploma				
Academic	2.30	2.34	1.91	453
Other	1.81	1.96	1.55	328
Work Experience				
Holding job while in school	2.04	2.17	1.62	653
Not working while in school	2.37	2.46	1.70	128

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A STOCHASTIC MARGINAL COST ADMISSIONS MODEL

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Introduction

The subject to which this paper is addressed may be illustrated by the following two examples.

In March of 1970 a qualified non-resident sophomore majoring in sociology applied to a large state university for admission in the fall as a transfer student. His request was denied. In May of 1970 an equally qualified non-resident junior majoring in chemical engineering applied to the same institution for fall admission as a transfer student. He was admitted.

Contrary to first appearance, this institution may have acted quite rationally. While sociology is a low cost program compared to chemical engineering, the institution may have realized that the marginal cost of chemical engineering was lower than that of sociology.

As a second example consider the policy of a small liberal arts college which accepts any qualified applicants who seek admission up to and including registration week. While this institution may have a good non-financial reason for this policy, it could be inadvertantly precipitating a financial crisis by admitting numbers of students whose marginal cost exceeds their marginal revenue.

Purpose and Constraints

The purpose of this paper is to measure the marginal educational and general cost for students by field and level, to compare this cost with the marginal revenue generated by the same students, and to explore the consequences of sequentially admitting students with positive net marginal costs.

In order to explore the methodology of a marginal cost model, a very constrained institution was hypothesized. This institution had an initial enrollment of 1,000 undergraduate students, each taking five courses per term. These course enrollments were arranged in a crossover matrix showing enrollment of students by major and level in courses by field and level. It was assumed that there were only eight fields of study and that each of these fields offered five courses ranging from the freshman to the senior level. While it was assumed that the institution had a graduate program and used graduate assistants for teaching some classes and laboratories, the simulation was limited to the undergraduate program.

A course schedule was specified, listing the number of sections of each course together with a maximum enrollment possible without adding sections. A staffing pattern was then assumed; courses taught by professorial ranked faculty were fixed in number while courses taught by teaching assistants were expandable by adding sections.

Method

The following method was used to identify students with a positive expected net marginal cost, and to introduce a sequence of such students into the system.

On the basis of the crossover matrix, probability distributions were made of courses taken by majors by level. These distributions were then scanned to locate programs with zero marginal costs of direct instruction, that is, programs where a new student could be accommodated in every course he was likely to take without necessitating adding a section. Costs of direct instruction (instructional salary costs) were considered first because they comprise the largest single category of educational and general expenditures.

Marginal costs for other instructional categories and for other educational and general categories were then estimated by level of student, and the total marginal cost for the admission of a particular type of student to the term in question was calculated. For the purposes of this model these costs were estimated very crudely. The following examples provide some idea of the guidelines followed.

For categories of instruction other than direct salary cost, a distinction was made between costs that would be incurred independent of the presence of the marginal student, and costs that would be increased by his presence. For example, salaries of departmental secretaries were not allocated to the marginal student while hourly office wages and the costs of instructional supplies were. In these latter cases average unit costs were assigned to the marginal student.

In the functional area of administration and general, the marginal costs of administrative salaries were judged to be zero while costs for other categories such as admissions, records, and data processing were examined in detail and divided between assignable and non-assignable expenditures.

For the library, costs of acquisition and cataloging were not allocated to the marginal student while average unit costs for operating the undergraduate library were.

The cost of organized research was not assigned to the marginal student since funds for research are virtually completed independent of the number of undergraduates.

Plant maintenance and operating costs were scrutinized in detail. Heating and lighting expenditures, for example, were not allocated to the marginal student while the average unit costs associated with janitorial services were.

The marginal costs for all of the educational and general categories were added to obtain the total marginal cost to be assigned the student in question for the term that his admission was being contemplated.

It was assumed that a marginal student in a particular term would be considered a regular (non-marginal) student in succeeding terms. Therefore for students at lower levels it was necessary to calculate the average unit cost for educational and general expenditures by program type for succeeding years of the student's tenure.

For this purpose ordinary methods of cost proration were employed. Instructional salary costs per student credit hour by department by level were calculated and an expected instructional salary cost was achieved by weighting costs by department and level according to the probability distribution of courses taken by that type of student at that level.

Average unit costs for other categories of educational and general expenditures were calculated by prorating every budget code expenditure to an appropriate category of student. For example, costs of the president's office were allocated equally to all students, costs of departmental administration to the students in that department, etc. Since a complete budget was not formulated for the institution hypothesized in this model, appropriate figures calculated for the University of Colorado were used.

The marginal cost for each term was, then, subtracted from the marginal revenue (net tuition) charged the student to arrive at the net marginal gain or loss from the admission of the student in question for each term of his tenure. The net gain or loss for each term was then weighted by the probability of his survival to that term to arrive at an expected net gain for the admission of that type of student.

The type of marginal student with the greatest gain was, then, admitted up to the point where his expected direct instructional marginal cost became positive. In other words, students of this type were admitted until, based on their expected pattern of course registrations, they ran into a filled section in at least one class.

It was then assumed that admitted students pre-registered for specific courses, simulated on the basis of the probability distribution of courses for students from that field and level. The crossover file was then updated by the registrations of these students, and continued iterations were made until the expected net gain for all types of students with zero marginal direct instructional costs became negative.

At this point students with positive but low marginal direct instructional costs were considered for admission. If their marginal net gain was positive they were admitted and the process was continued until the expected net gain for all types of students seeking admission became negative (or until constraints of time or size were violated.)

Example

Since it is difficult to visualize the process just described, we will illustrate it using segments of appropriate summary tables.

TABLE 1

SUMMARY OF REGISTRATIONS

Total Registrations	By / In	Anthro. Fresh.	Anthro. Soph.	Anthro. Jun.	Anthro. Senior	Soc. Fresh. etc.
5,000		225	125	75	75	400
286	Anthro. 100	40				50
200	Anthro. 200	5	20	2		10
113	Anthro. 300		5	15	2	
80	Anthro. 400		1	10	15	
42	Anthro. 410			5	8	
312	Soc. 100	35				70
230	Soc. 200	10	10			10
etc.	etc.					

Table 1 summarizes the crossover information. For example, there is a total of 286 registrations in Anthropology 100. Of these 40 are by freshmen anthropology majors and 50 are by freshman sociology majors.

TABLE 2

SCHEDULE OF CLASSES

Enrol., Time 0	Course	Sections							Max. Enrol. Total	Type of Instr.	Add Section?
			Maximum Enrollment								
		No.	1	2	3	4	5	6			
286	Anthro. 100	6	50	50	50	50	50	50	300	T	Yes
200	Anthro. 200	6	40	40	40	40	40	40	240	P-T	Yes
113	Anthro. 300	2	60	60					120	P-T	Yes
80	Anthro. 400	2	50	50					100	P	No
42	Anthro. 410	2	25	25					50	P	No
312	Soc. 100	6	52	52	52	52	52	52	312	T	Yes
230	Soc. 200	6	40	40	40	40	40	40	240	T	Yes
	etc.										

This table summarizes the class schedule, showing the courses offered, the number of sections and the maximum enrollment per section for each course, the total enrollment, type of instruction (professorial faculty or teaching assistants), whether or not it is possible to add more sections, and the total enrollment at time zero, the beginning of the simulation.

TABLE 3

INITIAL PROBABILITY DISTRIBUTION

Anthro. Freshman		Anthro. Sophomore		Anthro. Junior	
Course	**Prob.**	**Course**	**Prob.**	**Course**	**Prob.**
Anthro. 100	.18	Anthro. 200	.16	Anthro. 200	.03
Anthro. 200	.02	Anthro. 300	.04	Anthro. 300	.20
Soc. 100	.16	Soc. 200	.08	Anthro. 400	.13
Soc. 200	.04	Soc. 300	.04	Anthro. 410	.07
Econ. 100	.22	Econ. 100	.02	Soc. 300	.14
Biol. 100	.09	Econ. 200	.12	Soc. 400	.07
Biol. 105	.09	Biol. 100	.04	Econ. 200	.08
Chem. 100	.02	Biol. 105	.04	Econ. 300	.05
Chem. 105	.02	Biol. 200	.02	Math. 300	.05
Math. 100	.06	Biol. 205	.02	Engl. 300	.13
Engl. 100	.04	Math. 200	.08	Phil. 300	.05
Engl. 200	.03	Engl. 200	.08	other	.00
Other	.03	Engl. 300	.04		
	1.00	Engl. 400	.04		
		Phil. 100	.05		
		Phil. 200	.03		
		other	.10		

This table is calculated from the crossover matrix and shows the probability of a registration by a particular major in a particular course. The "other" category includes all courses which contain 2 percent or fewer of the students' registrations. The .18 in the first cell means that eighteen percent of the **registrations** by freshman anthropology majors are in Anthropology 100. (Since it is assumed that all students take five courses per term, the maximum percent in this cell would be 20, if **all** anthropology freshmen took Anthropology 100.)

TABLE 4

ITERATION RECORD

Course	Max. Enrol.	Time 0 Enrol.	Time 0 M.C.	Trial T1 Add	Trial T1 Enrol.	Trial T1 M.C.	Trial T2 Add	Trial T2 Enrol.	Trial T2 M.C.	etc.
Anthro. 100	300	286	0	0	286	0	0	286	0	
Anthro. 200	240	200	0	0	200	0	0	200	0	
Anthro. 300	120	113	0	0	113	0	2	115	0	
Anthro. 400	100	84	0	2	86	0	0	86	0	
Anthro. 410	50	42	0	1	43	0	0	43	0	
Soc. 100	312	312	+	0	312	+	0	312	+	
Soc. 200	240	230	0	0	230	0	0	230	0	
Soc. 300	150	148	0	0	148	0	2	150	×	
etc.										

Comparing the maximum enrollment with the enrollment at time zero, one can see from the table segment above that students can be added to all of the courses shown except Soc. 100 at zero marginal cost of direct instruction. For Soc. 100 one finds by reference to the last column of Table 2 that sections can be added, but only by incurring a positive marginal cost.

One then scans the probability distributions of Table 3 to locate potential zero marginal cost students. Anthropology freshmen, for example, cannot be added because there is a high probability (.16) of a registration in Soc. 100, a positive marginal cost course.

Upon scanning the entire list of distributions, we found only six areas out of the total of forty where zero marginal costs of direct instruction were likely. For each of these the expected net gain from the addition of a student could be calculated, and students from the area and level showing the greatest net gain could be admitted. This process could be continued up to the point where all the students of that type who applied were admitted or until the filling of classes created a positive marginal cost of direct instruction.

In the interest of time in the present simulation, all of the alternatives were not evaluated. Rather, seniors were considered first and if their net gain was positive they were admitted without checking to see if a lower class of student would produce a greater net gain.

When philosophy seniors, one of the six zero marginal cost areas, were considered, it was found that the expected gain from admitting that type of student was $383. A summary of these calculations is shown in Table 5.

TABLE 5

EXAMPLE OF NET GAIN CALCULATION
(Philosophy Transfer Seniors)

Marginal Revenue, First Semester (Tuition)		$642
Marginal Cost, First Semester		
Direct Instruction	0	
Other Instruction	42	
Organized Research	0	
Library	12	
Administration & General	34	
Plant Maintenance & Operation	21	
Total		109
Net Gain, First Semester		+533
Marginal Revenue, Second Semester		642
Marginal Cost, Second Semester		800
Net Gain, Second Semester		–158
Expected Gain Philosophy Transfer Senior 533(1.00) + (–153) (.95)		$+383

Marginal revenues for this table are simply tuition rates per semester. The marginal cost for the first semester is calculated as mentioned earlier by examining detailed budget categories for the functional areas and prorating according to whether or not those costs were related to the marginal student.

The marginal cost for the second semester was simply the average unit cost for a philosophy senior, as determined by a unit cost analysis by program area.

The net gain for each semester was then weighted by the probability of the student's survival to that semester, and the sum of weighted values was the expected net gain for the admission of that kind of student.

After it was determined that the addition of a philosophy senior would produce a positive net gain, the feasibility of adding a number of such students was contemplated. It was found that the limiting factor relative to the admission of philosophy seniors was the course Econ. 410, which could take only three more registrations before reaching capacity. Since the probability of a philosophy senior taking Econ. 410 was only .04, it was decided to admit five transfer philosophy seniors.

For the model being considered it was assumed that once a student applied for admission and was accepted, he would pre-register soon enough before the semester started to be able to up-date the course file and contemplate the addition of other types of students.

Thus, on the basis of the philosophy senior's probability distribution of courses, the actual enrollments of five philosophy students was simulated. Their course registrations were then used to up-date the enrollment file as summarized in the iteration record for trial T_1. In the portion of the iteration record shown in Table 4, one can note that two of these registrations were in Anthro. 400 and one was in Anthro. 410.

When all of the new registrations were recorded it was possible to identify a new set of zero marginal cost courses and contemplate the addition of another type of student with a high net gain. In the simulation conducted it was found that it would be profitable to admit three economics juniors. The registrations of these students were then used to up-date the registration file and the results were summarized in trial T_2 in Table 4. Note that because of the registration of two of these students in Soc. 300, the absolute limit for that class was reached. Since no more sections of that course could be offered with the staffing pattern specified, no further enrollments with a high probability of a registration in that course could be admitted.

The process described above could be continued until there was no more time to process registrations or until no more positive net gain programs could be identified.

Conclusions

While the model described above is very simplified, the results seem to indicate that a similar analysis could be made for a real institution without great conceptual difficulty.

However, any real institution would have to have an excellent data base, strong computer capabilities, and a well developed analysis of program costs and unit costs. A number of institutions now have such capability and many more will soon attain it.

In order to go through a number of iterations as done in the model, a real institution would also have to have a complete pre-registration program accomplished early enough to allow for the processing of marginal applicants before the beginning of the term.

In spite of this fact, simply an initial marginal cost analysis based on last year's pattern of enrollments and next year's estimate of students and course offerings could be of great benefit to an institution. Through such an analysis it would be possible to identify areas which could be expanded profitably and other areas which could be expanded only at considerable cost. Then when policy decisions had to be made, monetary optimization could be one of the inputs.

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AN INNOVATIVE ACADEMIC ADVISEMENT AND COMPUTERIZED ENROLLMENT PROGRAM OPERATIONALIZED AT CENTRAL STATE COLLEGE, FALL 1969

Barbara J. Ryan
Central State College

Central State College is a liberal arts institution located in the suburban area just north of Oklahoma City. We have an enrollment approaching 11,000 students, the majority of which commute from the metropolitan area.

We began preparing for continuous enrollment in 1967 when the president appointed an ad hoc committee to study the entire enrollment system. We had been operating with the old "Gymnasium type" system where ninty-five percent of our students enrolled within a one week period. The committee studied enrollment thoroughly, bringing in registrars from several institutions and making trips to other schools, and as a result recommended the continuous enrollment system which we now have. The director of advisement, (an individual with a doctor's degree) was employed January 1, 1969. Ten academic advisors were employed July 1, 1969, went through a three month training period, and we actually started enrolling students under the new system October 1, 1969. The advisors are all professional personnel with a minimum of a master's degree.

We have ten professional advisors and the director of advisement located in the Advisement Center where the student comes in on an appointment basis and enrolls in approximately a twenty minute session. The advisor spends most of the time conferring with the student about vocational choice, graduation requirements, selection of major and minors, etc., and actually enrolls the student in less than five minutes by a video display unit (IBM 2260) located on each advisor's desk. He keys in the student's social security number which causes certain student information to be displayed on the terminal. He then keys in the section number for each class and enters a code to end the transaction. When the transaction is ended, an automatic typewriter (IBM 1053) types up an invoice for the student which lists all the courses in which he has enrolled and prints out the assessment of his fees. The student is given this invoice immediately and may then pay his fees any time up to the deadline shown on the "print out". The student is completely finished when his fees are paid and need not return to campus until classes begin.

The program was originally written and operated on IBM 360/30 with 64K. We currently are operating on IBM 360/40 with 128K. The entire on-line system occupies 28K positions of the computer. The enrollment program for the on-line system consists of one main program and fifteen overlaying programs.

GDMN	Goodmorning routine, (Establishes all pertinent variables for that day). Displays all sections which had closed the previous day to all advisors.
SSX	To call a student's record for enrollment.
PSE	Process students enrollment (initialize all areas).
ADD	To add a section.
DRP	To drop a section.
END	To end an enrollment and update all the files.
PRNT	To print the student's invoice.
FIN	Calculates the student's fees.
END2	To write all updated records to the files.
TFC	Test a student's enrollment for conflicting times.
OFF	Signal the system that an advisor is finished and is leaving
CMU	To update class schedule file.
FAX FDX	Finance inquiry codes for a student's fee assessment.
PAG	Go from one screen display to the next. (For students who carry more than eight classes).
CAN	Cancel the advisors processing.
RST	Restore the screen as it was before a particular error which had occurred.

The Academic Advisement and Enrollment Center is concerned only with students eligible to enroll. Until they are eligible, they will be the concern of the Office of Admissions and Records.

Beginning freshmen who have been fully admitted will be advised by mail by the Office of Admissions and Records of the date, time and place of their first appointment with an academic advisor. At this first meeting one hundred students or more will participate in orientation and be broken into small groups for advisement and enrollment. When they leave the college after this first meeting they will be completely enrolled except for paying the balance of their fees. Fees may be paid at anytime prior to, but must be paid in full by the deadline as designated for that particular student. During each meeting the student will be given an appointment for his next academic advisement for the next semester.

New transfer students will be advised and enrolled in a similar way, however, more individual attention may be necessary.

The academic advisors must be sufficiently acquainted with degree requirements under the various catalogs.

Although advisors will be mainly concerned with degree requirements in two or three areas, they must be able to advise occasionally in all areas.

Evaluation of transfer transcripts, to determine equivalent and/or acceptable courses which meet Central State College requirements, are made by the degree check section of the Office of Admissions and Records. These evaluations, however, are made according to policy established by the faculty who has the final authority through the division chairmen for approval of course substitutions. The advisor working closely with division chairmen and the Office of Admissions and Records must be fully aware of transfer courses considered equivalent to those required at Central State College. He will also be responsible for obtaining substitution forms from division chairmen when they are needed and forwarding them to Admissions and Records at the time the degree check is requested.

Two weeks prior to the beginning of the semester the appointment schedule will be left open for students who will walk in at the last minute to enroll. Relatively few should come in at this time. Nevertheless, the Advisement and Enrollment Center must allow time for **many** students. A good estimate will be possible on the basis of the number pre-enrolled.

After the deadline date all students must pay in full at the time of enrollment. By showing their receipt from the Finance Office, their enrollment will be confirmed and their I.D. card issued or validated.

Students will be allowed to drop and add by returning to their academic advisor at an alphabetically scheduled time. The approval for the change will be the decision of the advisor, providing there is space in the class.

Sectioning is controlled by advisors, assisted by daily reports and programming from Data Processing. The program must provide:

1) A balance of sections,
2) a priority to graduating seniors,
3) class size controlled by the division chairman and/or size of the room, and
4) a reserve space for students who must get in.

Although the academic advisement and enrollment of graduate students is in general similar to that of undergraduates, there are some noteworthy differences. The educational program of the graduate student is: less structured, at a more advanced academic level, and often involves dual purposes, such as certification in more than one area, as well as attainment of a degree.

To meet the differing needs of graduate students, an advisement committee of one or more faculty members is set up for the student by the Graduate Office to assist him in the structuring of his degree program. To properly "advise" students at the graduate level the student is entitled to assistance from graduate faculty members through the structuring committee. Once the student's degree program is structured, including certificate checks where applicable, and the Academic Advisement Office informed of his program, he can be enrolled semester after semester by the Academic Advisement and Enrollment Office **without** periodic checks with his committee or the Graduate Office. Changes in his educational objectives due to vocational opportunities, personal choice, etc. may very well, however, require additional service from the Graduate Office and/or his graduate committee.

The following procedure is therefore outlined for graduate students.

1. The students advisement committee should be appointed and his degree program structured well in advance of his first enrollment as a graduate student.
2. A copy of the structured degree program, certificate checks and other materials relative to his program should be sent to the Academic Advisement and Enrollment Office.
3. All enrollment can therefore be made in the Advisement Center.
4. As the student sees a need, he can seek additional advisement from the Graduate Office and/or his committee.
5. Changes in the student's structured program could be communicated to the Academic Advisement and Enrollment Center by written memorandum carried by the student or by campus mail as needed.
6. Graduate students walking in, for the first time, at the last moment would be advised by the Graduate Office, who would in turn inform the Academic Advisement and Enrollment Center of the student's program by written memorandum.
7. Any student who has not previously met with the graduate committee must be advised by Graduate Office or member of Graduate Faculty prior to enrollment.

Our enrollment is continuous in that we are enrolling every day the office is open. For example, Monday, February 16, was the final day for late enrollment for the Spring semester and Tuesday, February 17, was the first day for enrollment for the Summer and Fall semesters. Each time the student enrolls he is given an appointment for a subsequent enrollment.

The system is working very well for us. It was a tremendous change from our previous system and effected practically every office on campus. Consequently many discussions were necessary to work out procedures to be followed. It is a system that uses no data processing cards what-so-ever, and all class rolls, term sheets, reports and the like are printed directly by the computer on continuous forms and distributed by the Office of Admissions and Records. A weekly report is given to the departmental chairmen of allocated, maximum and current enrollment figures for the upcoming semester(s). The faculty is completely freed from the advisement process as it effects enrollment. They are still involved in advisement but on their own terms and for their own purposes. The academic advisors, though under the supervision of the dean of admissions and records, are also considered assistants to the departmental chairman in each of the areas of the major.

There are several things which are important if such a system is to work, but the following four are essential.

1. An administrator who will coordinate and control the total system.
2. Sufficient finance to support it – it is expensive.
3. Faculty support.
4. Extremely capable data processing personnel whose office operates as a service office.

We would be pleased to have you visit our campus and discuss the system with us. We would also be willing to make a limited number of trips to other campuses to talk with you about the system if we may be of assistance.

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INSTITUTIONAL RESEARCH AT PREDOMINANTLY BLACK COLLEGES & UNIVERSITIES

SOME CHARACTERISTICS OF INSTITUTIONAL RESEARCHERS AT PREDOMINANTLY BLACK INSTITUTIONS

Charles I. Brown
Fayetteville State University

Every session has its beginnings, its points of origin. This Special Session on Institutional Research in Predominantly Black Institutions was prompted into being when a circular was received from Sidney Suslow that was solicitous of ideas for presentation at the 1970 AIR FORUM. Following a reading of the topic suggestions in the Suslow circular a low growl was emitted when I noted that the most popular word in the American language – BLACK, had no mention and very little inference, if any at all, among the several topic suggestions. Note of this omission was swept to a towering rage by slogans of Black Power and Black Pride and a how-dare-you letter was dashed off to the Program Chairman. Satisfied with this bit of derring-do and with having told off the whole of the AIR, a feeling of contentment remained until a response written by a very cool character in California was received that said in essence "Okay Baby. Tell us all about IR in predominantly soul institutions". This little story embellished already to quite extraordinary lengths, and purporting to recite the origin of this panel could go on and on but who in these scholarly environs would believe such an unlikely tale. Furthermore, I was cautioned by the thought that if I were to come in a jocular mood before a national body of institutional researchers whose mother tongue is computerese, and whose mien is at all times suggestive of a no-nonsense attitude, that I would run the risk of courting the revocation of my badge of membership. So to remain in the good graces of AIR FORUM, I have bowed to its protocols by preparing a second, more-nearly-like-it-happened, introduction.

As did all of the membership and the other persons chairing general and special sessions at this 1970 AIR FORUM I too received an invitation to contribute what I thought would make for an interesting session. Little did I hope at the time that an idea of interest to me would be accepted for presentation, and as far away as the moon was the idea from my mind of me chairing a session. So you can imagine how bowled over I really was to receive an invitation extending the chairmanship and task to develop today's presentation. The details of which will be presented shortly for your judgments, but first this overview.

METHODOLOGY

Turning now to the first effort of the panel, when my mind was no longer at peace with incubating the idea – some would call it dawdling – and the truth of my position could no longer be denied that I needed to know something more about institutional researchers and institutional research activities at predominantly black institutions than was provided by my own personal experiences. I naively assumed that all I needed to do was to turn to one or a combination of organizations and fit the bits and pieces of information stored in their computer files into a mosaic – for this particular instance and purpose, a mosaic of the hallmarks or characteristics of institutional researchers at predominantly black colleges and universities. But I was gradually released of this notion following the accumulation of "Yes, we have no bananas", replies from the Regional Education Laboratory of the Carolinas and Virginia, Wilbur Tincher of AIR, Educational Testing Service's IRPHE Program, HEW's National Center for Educational Statistics, the Center for the Study of Higher Education, and the Directors of IR at the Universities of Michigan and Tennessee and what I had to do to fill this information void became painfully evident.

So during the last week of January a hastily formulated questionnaire, that leaned heavily upon an already previously distributed AIR Membership Information Form (1970), was addressed to institutional research personnel at 121 predominantly black colleges and universities. The mailing list was drawn from **The College Blue Book 1969-70** and the **Directory of Predominantly Negro Colleges and Universities in the United States of America**, a January 1969 publication of Plans for Progress.

The original mailing list included public and privately supported junior and community colleges and professional schools. But the response from the junior and community college category was most disappointing and to guard against unwarranted findings, this category (28 institutions) was dropped from the study. Illustrative of this point, ten publicly supported junior/community colleges were mailed questionnaires, two responded; eighteen privately supported junior/community colleges were addressed, four responded. Three mailed and one response was the score for the professional school category. Of the nation's complement of ninety predominantly black senior colleges and universities addressed, a usable response was received from sixty-one (68 percent). Twenty-nine, or 48 percent of the respondents were currently active as institutional researchers and it is upon this group that the following index of characteristics of IR'ers at black institutions are based. Attachments that detail the results of the poll conducted for the purposes of this study are appended to this report.

CHARACTERISTICS

1. Employed principally by small baccalaureate degree granting institutions – Questionnaire items 4 and 5.
2. The IR function, through a person charged with institutional research, is found with approximate equal frequency in private black institutions (30 percent), as in public black institutions (32 percent). The number of

institutions that do not have an IR or equivalent office exceeds, by a slight margin, the number of institutions that do – Questionnaire item 6.

3. Among the several institutions which do not have an office of IR, the intent to establish such an office was found much more frequently at public black institutions (60 percent) than at private black institutions (20 percent) – Questionnaire item 7.
4. IR personnel at black institutions are more likely to be titled Director of Institutional Research or Director of Research and Development, while Institutional Research is the name of the office most frequently used – Questionnaire items 8 and 12.
5. IR has been a feature of the private black institution for a longer period of time than it has at the public black institution. But even so, the office is new to both private and public institutions as 24 of 29 institutions report their office was established within the last three years. – Questionnaire items 9 and 10.
6. The institutional researcher at these institutions came to his present position with a background of preparation that runs the academic and experiental gamut. The academic fields most highly represented are Mathematics and Psychology – Questionnaire items 11 and 28.
7. The institutional researcher reports directly to the President and spends 50 percent or more of his time in IR functions upon the request of outside agencies or another campus office – Questionnaire items 13-17.
8. They are more likely to conduct a one-man shop operation and need additional professional and secretarial assistance – Questionnaire items 18-21.
9. IR personnel at private black institutions inquire into problems they consider much more relevant to their institutions than do IR personnel at public black institutions – Questionnaire items 16 and 23.
10. Fifty-five percent of the institutional researchers are middle-aged, 34 and 21 percents respectively are beyond middle-age and young adults; they are more than likely to hold senior faculty rank, a doctorate degree, and to be fairly well paid for their labors. – Questionnaire items 23-27.

CONCLUSIONS

Save for the lateness in the establishment of an office for the institutional research function, the data relied upon in this study suggests that for the most part the characteristics of institutional researchers employed by predominantly black colleges and universities are not too dissimilar from those of their counterparts in predominantly white institutions. A third major conclusion suggested by questionnaire items 16 and 23 is that institutional researchers at public black institutions appear to harbor fewer job frustrations than their counterparts at private black institutions as measured by IR functions they are now doing compared with IR functions they would rather be doing. A fourth conclusion is that far too many black institutions of higher learning, in both the private and public sectors, are forced to make-do without the services of an office of institutional research. Surely this conclusion is fraught with implications for the Association of Institutional Research.

And to begin a train of thought in this direction one implication which comes most quickly to mind and given but brief mention here is a value-scale that allows a more than wasteful dissipation of time, thought, and energy in a vain attempt to reach a unanimous resolve among the membership on the proper role and function of institutional research while there are black institutions – and a hundred others, who do not even know of the Association for Institutional Research. And one can well imagine that the most pernicious consequence of this kind of elitist thinking, is that in these institutions of greatest need, neither Russell-like nor Sanford-like studies are being conducted to the benefit of these institutions. And what is even worse, the indicators, as they come to me, are that the Association of Institutional Research cares but little for the institution or the fumbling institutional researcher beyond the pale of its membership. The implication I have in mind would reverse the order of some of AIR concerns, this reversal of attitude would in turn cause the Association to initiate and implement a program(s) that would lend the assets of institutional research to benighted black and white institutions who do not now know of its benefits.

From the several points raised in the papers of the special section on Institutional Research at Predominantly Black Colleges and Universities the Association of Institutional Research has a larger – than its present role to play in assisting the development of the institutional research function in these schools. And to lend some direction to the future role of AIR along these lines, the panelists, of the special session on Institutional Research at Predominantly Black Institutions offered the following initial proposals.

1. That the proposed larger publication effort of the Association of Institutional Research include a monograph series devoted to Black Institutions of Higher Education. That the team of investigators and writers of this project(s) include some black institutional researchers – with one of them serving as editor-in-chief for the series.
2. To assist with the development of an institutional research program at predominantly black institutions, that the greater Association appoint a committee to formulate a proposal that would enable the hiring of IR personnel at these institutions, that the proposal include as one means, a program of visiting IR consultants and temporary positions for as long a period as a year to assist with the development of an IR program that will have practical applications for these institutions. The receiving agency for such a proposal might well be the U.S. Office of Education or a foundation interested in the promotion of a better educational program at predominantly black institutions.

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INSTITUTIONAL RESEARCH ACTIVITIES ON AN OPERATIONAL LEVEL AT THE SMALL PREDOMINANTLY BLACK UNIVERSITY

Therman J. Andrews, Jr.
Elizabeth City State University
and
John B. Davis
East Carolina University

Organized institutional research is a recent concept in the public institutions of higher education in North Carolina. It has only been since 1976 that the state has formally supported such offices in its fifteen public universities. Elizabeth City State University, a small predominantly black institution in the state system had, like most of the others, no office of institutional research of any kind until that time. The institutional research office at Elizabeth City has made much progress during this two and one-half year period, even though problems have arisen. Most of the problems are common to any newly created office of institutional research, but many of them are unique to institutions that serve predominantly black students. This presentation will include comments on normal institutional research activities at Elizabeth City State University, but will stress the institutional research that is seen to be unique but essential to predominantly black institutions.

Organizational structure and activities in institutional research vary from institution to institution, but there are common factors in all offices of institutional research since most institutional research people are primarily concerned with relating input, environmental, and process variables to output variables. Yet, while these four factors are providing a common framework for institutional research, they also are underscoring differences within the individual institutions. The existence of these differences, especially in predominantly black institutions, impose both restrictions and opportunities for institutional researchers at their respective institutions.

Turning first to differences in the area of input variables, the majority of students at a predominantly black university are disadvantaged from a socio-economic point-of-view. Most of them come from a family background where a low annual income is the rule rather than the exception. Consequently, the majority of them need and do receive some type of financial assistance. Seventy percent of the students at Elizabeth City State University receive some sort of financial assistance.

More important, however, most black students are unable to visualize themselves as important individuals who can exercise a great amount of control over their own destiny. This inadequate self-image causes many black students to set their career goals both too low and too narrow. Furthermore, it has been observed that one important aspect of an inadequate self-image is a low motivation to succeed in society at large and at college in particular. This factor has been operating over their elementary and secondary school experience, and they come to the university educationally disadvantaged in terms of their preparation to do college level work. As a result, because of the self-image, motivational, and actual level of preparation factors, it has been found that these students have a greater need for special counseling and remedial programs to help them overcome the deficiencies in their pre-college experience.

Turning to the environmental and process variables, there are many characteristics that would be true of any small institution. A small enrollment suggests that the institution has a small number of faculty members. This in turn implies a limited curriculum. A small enrollment places restrictions on the size of the administrative staff, the amount of research activity, and the extent of community services. All of these factors have implications for institutional research. For example, the results of institutional studies must be interpreted with caution in light of these limiting factors.

In addition, however, at the small predominantly black institution a high percentage of students live in the dormitories. At Elizabeth City State, for example, 77 percent of the student body is housed in the residence halls. Also, the attrition rate, especially among males, is abnormally high. One can readily see from this information the additional dimensions necessary for any institutional research design.

An examination of the normal output variables also produces additional concerns for the institutional researcher in the predominantly black institution. In the past the major outputs were students in the fields of education and the ministry. Today, career opportunities for black college graduates have expanded greatly. Major corporations, educational institutions, and the federal government actively recruit black college graduates. As a result, institutional research that monitors the educational process and evaluates the quality of its products becomes extremely important.

Up to this point, the fact has been reflected that much of the institutional research in predominantly black institutions is similar to the institutional research that would be conducted in any small institution. There also has been an attempt to make the case that there are indeed factors unique to the predominantly black institution that would cause institutional research in these institutions to take on greater dimensions. For example, it is necessary for special attention to be given to evaluating the effectiveness of remedial work, to factors which may reduce attrition, and to efficiency within a small university.

Operationally, the office of institutional research at Elizabeth City State University functions as most such offices. The Director of Institutional Research is responsible directly to the Academic Dean. The Director is charged with the responsibility for coordinating and conducting research that pertains to the institution itself, for bringing together data on the history and development of the institution, for the collection and codification of data relative to the current status of the institution, and for the preparation of various reports required of the institution from external sources such as the State Board of Higher Education, the U. S. Office of Education, and the various accrediting agencies. In addition, the Director of Institutional Research is responsible for seeing that the President, the Dean, the Director of Development, the Director of Student Personnel Services, and the Business Manager are supplied with appropriate information and data analysis that will assist them in their planning and decision-making functions.

To carry out these assignments the Office of Institutional Research at Elizabeth City State University collects or has easy access to the following information:

1. Student admission and enrollment data by sex, home address, college residence, previous educational experience, and present educational program.
2. Faculty data by sex, degrees held, field of study, field of employment, research record, publications record, academic rank, tenure status, and current salary.
3. Housing data by type, quantity, and usage.
4. Financial data by source, amount, and record of expenditures.
5. Library data by quantity, type, and utilization.
6. Facilities data by type, quantity, value, and usage.
7. Student graduation data by sex, program, degree, academic record, and intended profession.

This information, plus additional **ad hoc** data, allows the Office of Institutional Research at Elizabeth City State University to conduct the normal studies associated with this type of office. Over the past two years the Office has compiled statistics or conducted studies in the following areas:

1. Students – number, ability, source, sex, levels, majors, retention, continuance in graduate school.
2. Faculty – number, degrees, tenure status, age, experience, academic rank, salary, turnover, load.
3. Curriculum –courses offered, course enrollments, course content.
4. Instruction –number of sections, section size, grade distributions, failures, credit hours produced, innovative practices.
5. Facilities –classrooms, laboratories, offices, residence halls, administrative space, instructional space per student.
6. Finances – sources of income, amounts of income, expenditures by various functions and organizational units, cost per credit hour produced.

In addition, because of the unique factors affecting predominantly black institutions that were suggested earlier, there are other types of institutional research that are considered essential at Elizabeth City State University. Studies that deal with the problems of poor self-image, low motivation, remedial programs, financial needs, campus living-learning patterns, and educational goals and career aspirations have either been conducted, are in progress, or are in the planning stage. It has been found that the data routinely collected in the office, supplemented by student attitudinal and environmental data, can be used to construct student profiles that provide a great deal of insight into the nature of these problems. The Regional Education Laboratory for the Carolinas and Virginia, through its higher education program, has been most helpful in assisting Elizabeth City State University in suggesting research designs and identifying research tools that address these problems. One of the most effective instruments used has been the College Student Questionnaires published by Educational Testing Service. These instruments can be used to measure student change over time and address themselves among other things to career aspirations, motivation for grades, social consciousness, and peer-group influences. Data from these instruments have been used to paint profiles of the Elizabeth City State University student body. On the basis of this information the administration is considering expanding its remedial offerings, revising its counseling procedures to emphasize positive self-image development, and is becoming more aware of the problems influenced by the living-learning environment of its students.

In closing it should be stressed that although the bulk of the work in the Office of Institutional Research in a small predominantly black institution will not differ marketly from that of other small institutions, the institutional researcher in a predominantly black institution must address himself to the problems that are unique to his institution or much of his other research will become meaningless.

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INSTITUTIONAL RESEARCH IN BLACK SCHOOLS AS A PART OF A TOTAL INFORMATION GATHERING AND REPORTING SYSTEM

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INTRODUCTION

Institutional Research which attempts to provide total information about the institution must of necessity involve all major administrative and academic offices. Such information must reflect the needs of these offices and must anticipate the needs of the students served. Information gathering must begin when the University first contacts the student and should never end.

The two principal entities involved are students and the institution. In general, personal and academic information should be gathered on and about the student at entry and the University should continuously monitor his progress – showing each level of development and achievement. Information gathered about the institution should reflect its overall effectiveness as measured by its academic process, research production and community service.

Once gathered, this information must be analyzed, synthesized, categorized, and reported to provide an accurate and informative picture of the institution to those agencies concerned with the many facets of higher education. Although this information is needed by external agencies, a far greater need exists within the institution itself. As with any efficient business, the University finds itself in need of constant appraisal and evaluation. Therefore, there is a need for the University to continuously look at itself internally and externally, providing an accurate information base upon which to make decisions.

In previous years, Black institutions have not had benefit of this type of analysis and have suffered severe consequences because of this deprivation. They have lacked an accurate information base upon which to make viable decisions which would benefit the institution, its faculty, and its students. Lack of this information base has not been primarily the fault of administrators but rather due to the perpetual shortage of operating funds. Human and fiscal resources needed to perform these functions have been relegated to the sub-basement level in terms of priorities.

The number of Black students is increasing at a higher percentage rate than white students and many will go to white schools. We know that all education should be at a quality level and must provide a total academic experience at all institutions. In order for Black institutions to gain the information needed to make the kinds of creative, viable, and progressive decisions requisite to providing quality education, they must have the physical and human results necessary to develop the area of institutional research.

At the present time, there are 88 senior predominantly Black colleges and universities in the United States with an enrollment of approximately 148,000 students. An additional 226,000 Black students attend the remaining 2,500 senior colleges and universities in the nation. This equals about 4.8 percent of the nation's total college population. A quick calculation will reveal that 40 percent of all Blacks in higher education are still in Black schools. Many of the Black students now attending predominantly white institutions have been recruited in the past few years. Recruiting has been stepped up because of two primary reasons: 1) Students and faculties are demanding it, and/or 2) the Federal Government is requiring positive steps to insure equal opportunity for all our citizens.

It has recently come to the attention of many predominantly white institutions with Black students that many of them enter college with unique problems. Unique here meaning that these schools have not in the past been confronted with these problems on a large scale. Many of you in the audience understand this situation far better than I do, however, I shall now get to a situation with which I am more familiar.

Many of the 148,000 students in the Black schools come from deprived backgrounds and are poorly prepared for college work. Administrators of white institutions are finding this to be true. Administrators of the Black schools have known this for many years and have had to deal with this problem and many more, with far fewer human and financial resources during these years. Much in the way of past successes (and failures) have been made without the benefit of a great deal of research and analysis. This is generally known as seat-of-the-pants operation. We believe that decisions, made in the future, which will affect these students, these schools and ultimately America should be based on accurate, up-to-date information.

PART I. GAINING THE NEEDED INFORMATION

The first question to be answered in our efforts to establish an information system has to do with how one gathers the needed facts. Secondly, it must be determined when the information should be gathered. These two questions are actually complimentary. We believe that most of the desired information should be gathered when you have the student as a captive participant in your program. This would necessarily cause you to gather all possible information when the student is first accepted. Gathering the information during early contact has the added benefit of offering the University a more complete and accurate picture of the student. This occurs because the student will use more caution while completing required forms at this time than at any other period. Several reasons explain his caution at this point. The primary reason is that he wants to make a good impression on the University. We believe that the University should make a good impression upon him. This answers when the information should be gathered.

Let us now take a closer look and see just what kind of information should be gathered. The same basic kinds of information should be gathered on all students, not just the

Blacks; however, on Blacks additional information must be collected.

Pertinent information should be collected about: 1) Family and background, 2) educational level and achievements, 3) professional aspirations, and 4) relative measure of intelligence.

The information on the educational level of the student has been gathered and analyzed most frequently. Now, since the world of business, industry and government has opened a whole new realm of opportunities to Blacks, I feel that one must gather much more information on the ultimate aspirations of the students so as to point him into the non-traditional directions. Here it is not suggested that all students be pointed in the non-traditional areas, that is non-traditional as far as Blacks are concerned, but that a significant number be counseled about professions other than the teaching and preaching ones. However, in order to steer students in these directions, one must not only know what his aspirations are, but one must also know what his relative intelligence level is. This is to say that the student must have the desire as well as the ability to succeed in the profession to which he is sent. Black misfits are no more desirable than white misfits. So one must design and gather information on this critical area.

Now we turn to the educational level of the student. This is ultra-important here because many of our Black students still come from inferior high schools, that is, they come from schools that are perpetuating a cycle of mediocracy. So one must clearly define what the student's educational level is. The information collected here will later be used to help both the student and the University. There is nothing more frustrating than for a student to come into a new situation (not only a student, but any person) and find himself totally overwhelmed before he can get his feet on the ground, let us say. In order to prevent these situations as often as possible, the relative educational levels of the students should be known.

Information of a general nature must be collected on all students and will not be reviewed here. This information may have nothing to do with specific academic requirements, but will assist both the student and the University in a general manner. This type of information should be collected both during the initial contact phase and while the student matriculates at the University.

PART II. UTILIZING INFORMATION FOR THE BENEFIT OF THE STUDENT

The information thus gathered can be utilized quite readily for the benefit of the student. The first benefit would be in the admissions process, that is, the student could be admitted or rejected by the University, or he could be conditionally admitted. Sometimes the rejecting of a student is not altogether bad. It may even be helpful to reject the student and have him go to a Community College or to a Technical Institute or Trade School rather than having him come to a University for which he is not academically prepared.

The area of Counseling and Testing is a very important one and the student should receive all possible benefits from it. To effectively use it, however, information about the Center and the student must be available.

While the student is continuing his educational experiences, the University could and should be gathering information to continuously monitor his progress. This will let the institution know how effective its program is as the student progresses. Certain milestones may be set, such as, the end of the Freshmen Orientation project, the Freshmen studies program, or at the end of some remedial courses if necessary. The important thing here is, that the University has a good knowledge of exactly what the student is doing and what his potentials are. If the University feels that a high potential student is not being treated properly, then here some action would be justified. It may be found that a student has come to the University in one subject area but would be best suited in another. If his progress is monitored closely this could be detected and corrected. If someone would take the time to study this information, the student could be advised of his potentialities in a different area of study, and consequently, could change his area of concentration. This is not to say that the student would have to follow the advice of his counselors or even his major advisors, but at least the persons with whom the student is associated would know exactly what the student is doing and how well.

Another very important area where the University would benefit from such information is in student services. Right now there is a rebellious atmosphere on campus and any Dean of Student Affairs could tell you what a hot seat he has. There are several reasons for this and the students are not altogether wrong. That is, some of these student services have not lived up to what they should or could do, so this is an area where a great deal of information should be gathered and analyzed for the student's benefit. The University would also benefit greatly. Some services may be outmoded and could very well be replaced. Some services may not be living up to expectations and others may be over-taxed. Data collection and analysis should point these out and assist all hands in the process.

Other things which could be of use both to the University and the student would be his other non-academic achievements, such as, his extra-curricular activities, his participation in the debating team, the student government, football and basketball, sororities, or some community project. Based on what the institution finds as data is collected and reviewed, it could identify these students as potential leaders. That is, it could very well be that the University's Administration might want to consider utilizing some of these bright young minds.

Figure I identifies the points of student contact for gathering information. Figure II presents a system model which can be used for gathering information. Information which is gathered about students is a basic part of the input for the total information system of the institution.

The second half of the presentation will cover the utilization of the information for the benefit of the institution.

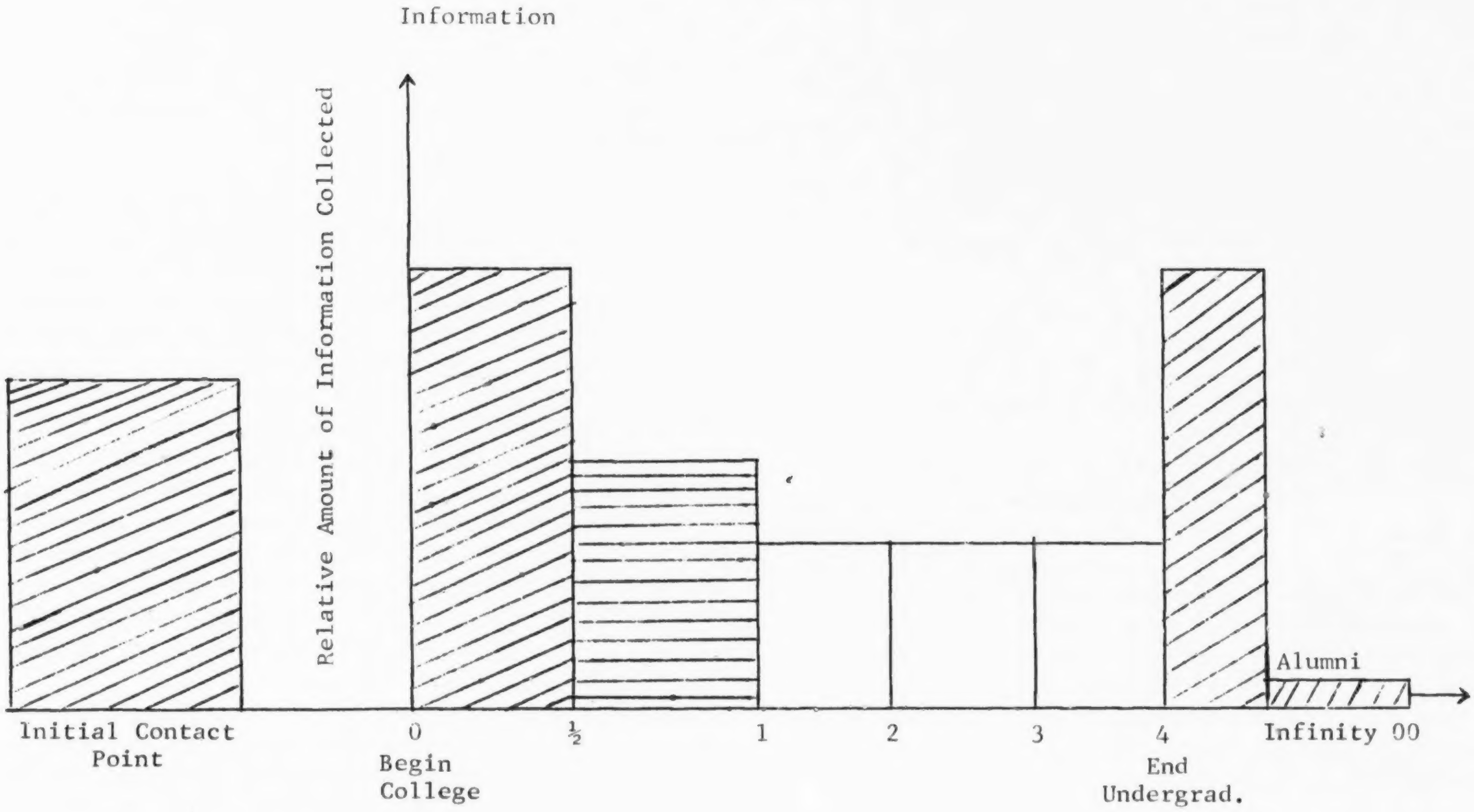

FIGURE I: POINTS OF STUDENT CONTACT: PRE-ENTRY, MATRICULATORY, POST-GRADUATE

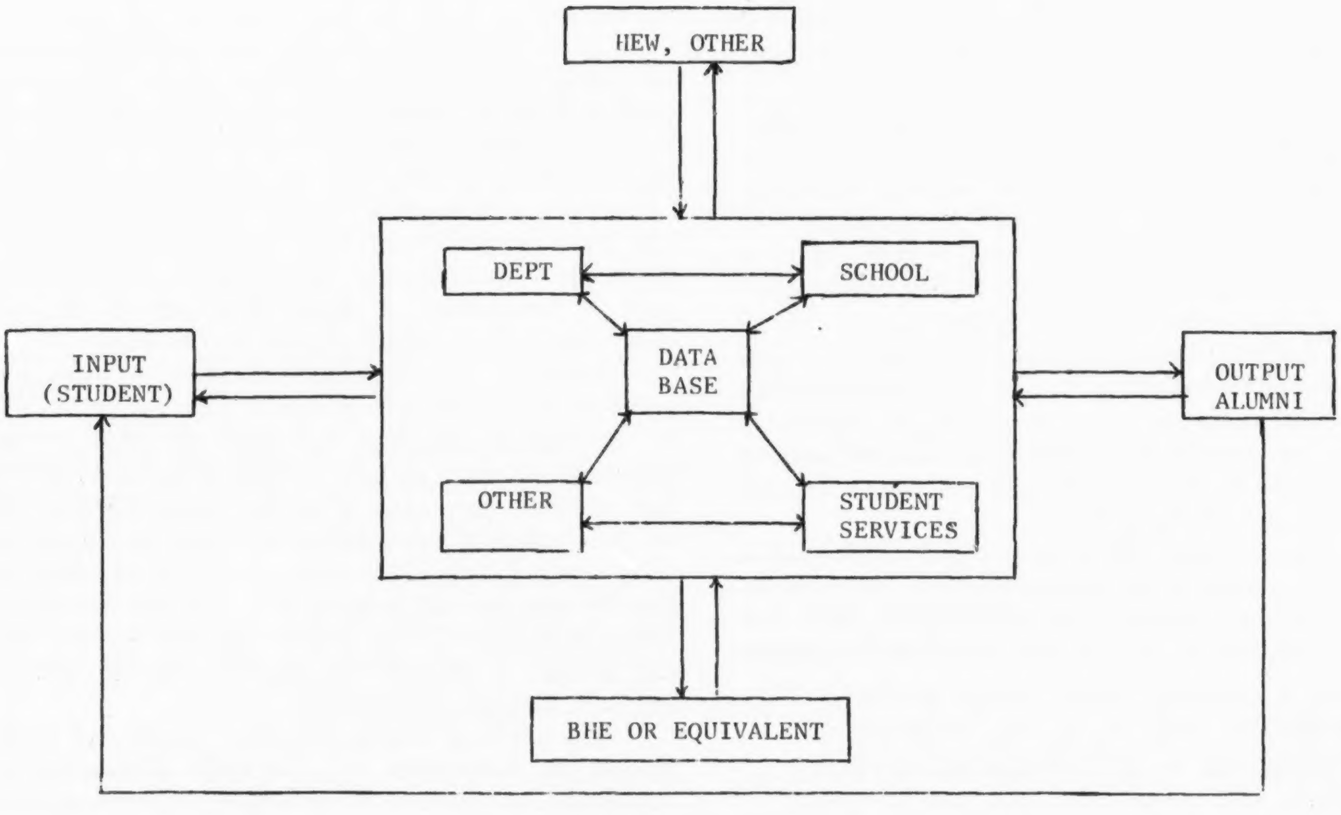
HEW, OTHER
DEPT
SCHOOL
DATA BASE
INPUT (STUDENT)
OUTPUT ALUMNI
OTHER
STUDENT SERVICES
BHE OR EQUIVALENT

FIGURE II: BLOCK DIAGRAM OF SYSTEM MODEL

PART III UTILIZING INFORMATION FOR THE BENEFIT OF INSTITUTIONS

Institutional Research is involved with the gathering, analysis, and use of information about an institution, its constituents, and its programs. Institutional Research allows an institution to know about itself, something of its past, its present status, and allows it to project and chart a path for its future. Such is important for the perpetuation of an institution and for its growth. Perhaps the most essential function of Institutional Research in the University or College is to provide a mechanism for constant appraisal and evaluation and to allow for having accurate information, and I underscore **accurate**, from which to make decisions about itself, its role and its publics.

As previously indicated, Black Institutions have not had the benefit of the use of Institutional Research as an integral part of the institution. Many inadvertent and indirect severe consequences have occurred because of this. Had Institutional Research been present and viable at Black Institutions for the last quarter of the century, perhaps many of the erroneous, biased, "hit and miss," subjective studies or rather "so called studies" about Black Institutions would not have been developed and gone unchallenged. These studies perpetuated myths about Black Institutions and have become a part of the basic reference materials for higher education.

One such document is the Riesman-Jencks[1] article published in the **Harvard Educational Review** in January, 1967. This article was based largely on conjecture, subjectivity and at most represented a compilation of secondary and tertiary sources of data. When the article was released the reaction among the Black college faculty was one of outrage at some of the conclusions yet there was no collective compilation of data to effectively refute the conclusions of that report. The McGrath report [2] represented a view of Black Institutions in a one-year study 1963-64, but no in-depth time period was invested to systematically collect primary data over a sample of years.

The recent book by LeMelle and LeMelle, **Black College: A Strategy for Relevancy**, points out that beginning with the Phelps-Stokes Fund Study of the Traditional Negro College in 1917, many other surveys have been commissioned and completed, published and accepted as valid, reliable data. This includes the SREB report on **The Negro in Higher Education in the South.**[3] One believes that these reports were done in all sincerity and funded by organizations and people who were sincerely interested in advancing the cause of higher education among Black Americans. This does not, however, negate the fact that much of the information was survey research and was not based on documented data collected and analyzed by the colleges or at the college campuses.

Most of these studies have simply been valuable only in the fact that they gave information and often this value has been negated by the negative presentation of such data without documentation of primary data about the institutions.

> "In terms of providing a useful critique in pointing out imaginative direction for the education of black youths, the much publicized surveys have contributed only marginally. This fact is quite obvious since one of the most recent studies on this subject by Christopher Jencks and David Riesman has only again reaffirmed what similar investigations have purportedly established through the years: namely, that the traditional Negro College still constitutes the "educational disaster land."[4]

I must say at this point that I concur with the LeMelle opinions, that we should declare a moratorium of at least 20 years before the next thorough investigation of the traditional Black College is launched by persons outside the Institutions without basic data. Perhaps a moratorium of these 20 years will allow us to develop Institutional Research at the Black Colleges so that we can provide accurate data and develop studies ourselves which will accurately describe our institutions, and the fabric, flavor and input of these institutions into higher education – individually and collectively. At that time perhaps Mr. Riesman, and Mr. Jencks, along with the modern day white graduate students still doing "arm chair – over the miles" research should they so desire, will have primary data available to develop the kind of studies about the Black Colleges which educators and researchers can consider scientifically sound, reliable and valid.

It is inherent that the Black College like other colleges or educational institutions must be evaluated, finally, upon its own possibilities, programs and resources. Thus, the need for utilizing information for the benefit of the Black Institution is great.

Institutions utilize information for internal and external benefits. Internally, information can be utilized to give the institution an accurate knowledge of its resources – human, program, fiscal, and physical. Knowledge of resources, allows for the kind of information that gives direction to the capabilities of the institution. In the final analysis, the movement and development of any institution depends upon its resources.

In terms of its students the institution can utilize information about their familial, social and educational origins; about the social factors impinging upon them prior to entering the college; and social factors at work which impinge upon them while they are in college. Knowledge of such factors and origins of students will allow the institution to plan academic and co-curricular programs to adequately meet the needs of these students and move them beyond the mere level of acceptance of where they are, to the level of productivity that a college graduate should have.

Knowing what is already deficient, or what is already enriched in their backgrounds, will allow for guided direction in establishing programs for students. One example of knowledge of previous factors which will guide institutions is that of health care. Any institution doing effective planning for the decade of the seventies and beyond cannot possibly escape investigation of the kinds of health habits their students have brought and will bring to the institution because this has direct bearing on the kind of health services that the university will attempt to provide for students and will influence the approach to health care services.

The academic origins and career patterns of faculty will provide the institution with adequate information to best utilize persons who have specific skills, expertise and have had specific past experiences. This will allow for the orderly recruiting of new faculty by strengthening weak areas as well as providing a greater distribution of academic preparation. The other added knowledge is that of personal experiences which the institution can tap as resources for providing models for students and promoting interaction among students and faculty. Such information about origins will give the university some idea about the degree, range and quality of input that the faculty member will provide into the educational program.

Knowledge about the alumni is a very valuable human resource to give feedback to the institutions, and to represent the institutions' input into their education. Such knowledge will allow the institution to modify programs and monitor its impact on the students that it serves.

Knowledge about its many publics (especially its financially supporting public) is necessary for institutions to define financial and philosophical support areas.

Program resources including the academic program and the co-curricular program, make up the heart of the educational resources at the institution. Knowledge about curriculum content can be utilized by the institution to identify its strong areas. Since 1965, most Black Institutions which are accredited, have participated in an Institutional Self Study and evaluated their curriculum content. If such evaluation of the curriculum is internalized as a part of institutional research at the institution, knowledge about curriculum content will be available on a semester and an annual basis for use in evaluation.

Information about the instructional methodology in the academic program can also be a part of the regular evaluating process. New methods can be tried and evaluated using results to make changes where necessary and desired. Student involvement in evaluation of instructional procedures is the greatest input and should be included in evaluation.

The practicum experiences of an education program – where the interface of theory and practice meet, can be used to determine how well it is preparing students and in involving the University in the merger of education-interaction and social change.

The University needs to know the quality and quantity of research generated and participated in by its faculty, administrators and students. Internal dissemination of such information acts as an incentive, provides information so that interested persons might be involved, and generates a sense of pride in participation in the discovery in or rearrangement of knowledge.

At the co-curricular-curricular interface the University should know and use changing needs identified both by the students and the University as guidelines for expanding or contracting the co-curriculum.

Fiscally, the University needs to know the dollar cost of its educational product; where the money comes from and where it goes. In fact all members of the internal academic community need to know this information. The University needs to know:

1) What services, programs and people get **fiscal** priorities?
2) What programs cost more and produce fewer students, yet are viable and needed?
3) What programs cost more, produce fewer students, and are not needed or viable?
4) Where are the institutional fiscal priorities?
5) Where, how, and by whom are fiscal decisions made?
6) Where are areas of extremely good management?
7) Where are the areas of poor management?

All fiscal data relate to the entire university program and are vital information. It is especially vital for Black Institutions because of the limited supply of funds coming to the University and the great need to make the best use possible of funds.

This has been a brief sketch of the general knowledge of internal resources – human, program and fiscal-physical that the institution needs for internal and external use. It can be utilized internally in the following ways:

1) To accurately describe the present status of these areas,
2) to identify the realistic potential of the institution within a given segment of time,
3) as a firm research base for long and short range planning – internally, (for example, school divisions and/or departments within the university can use the research base of information acquired about the general university to modify, expand or contract programs)
4) to order (rank) internal institutional priorities, and
5) to assist in institutional decision making.

The data can be used externally as follows:

1) To help the institution develop and project its image to its many publics,
2) to attract human and program resources,
3) to attract funds, and
4) to promote interaction and social change.

One of the accepted stereotyped images of Black college students for example, is that they have low aspirations in general. In a recent student questionnaire administered to 36 percent (1,205) of the student body at North Carolina Agricultural and Technical State University, 75.6 percent indicated the desire to receive a degree beyond the Bachelor's Degree, 39.2 percent indicated interest in pursuing the Masters Degree, 4.9 percent other degrees, and 31.5 percent, the Doctorate. These Black students do not have low aspirations so this must be projected as a part of the image. Another stereotype is that the faculties of Black institutions are under tyrannical rule. The results of the Institutional Functioning Inventory which was administered to the faculty and administrators of the institution, showed that the faculty did not describe itself as under tyrannical rule but rather identified the process of the academic community of being a democratic one. These are just two examples to show that the systematic, orderly, regular collection of data will help an institution know itself and project this image to its various publics. Collective data from several institutions will help project correct information.

Once the image is accurately projected and reflected, it will assist the University in a second way – **attract human and program resources.**

1) **Attracting staff and faculty** Faculty will have valid data to use in making decisions about working in the Black Institution. It will help the University in the competition for good faculty. For example, a strong program that an institution has might be much more attractive to a person looking for a position in that field than the entire university. Since the name of the game in higher education is reputation, and since most universities or colleges have built their reputations on the total institution in general, many prospective faculty members do not go beyond the "reputation" of the institution to investigate the strength or weaknesses of the programs in which they wish to teach. Therefore, an institution could identify its programs, its resources in these programs and the quality of its students to prospective faculty and increase chances of attracting these persons.

2) **Attracting students** Information will help the university to recruit students but would further help to identify the university's interest in the secondary schools (especially the feeder schools) from which the institution draws its pupils. Bridge programs or cooperative programs with the secondary level schools can be developed which will insure a supply of students and will also insure raising the quality of their educational experiences prior to coming to college.

3) **Attracting special programs** Where an institution has particular expertise and program resources to operate special kinds of programs, making this known will help in the competition for attracting such programs.

4) **Attracting guest lecturers and visiting professors** These will enrich the experiences of the college community.

5) **Attracting specialized chairs for special areas within the university funded by outside agencies** The third way that data can be used externally is in **attracting funds.**

The "development game" or the game of attracting fiscal support for institutional programs is vital for both public and private Black institutions. Black publicly supported institutions have suffered a discrimination of financial support with the states continuously funding the same instructional programs at a lower level than at comparable white institutions or in some cases at inferior white institutions. Therefore, the public institution needs to have its data and information available to help attract additional funds from the state and other agencies. Private institutions who depend almost entirely upon the sponsoring group for support should be able to identify their programs and resources to attract funds.

The established white universities have had the concept of, if not the name of Institutional Research as an intricate part of the fabric of the institution so that evaluative and analytical data that can be used to secure more funds are always available. In other words, institutions which have information can do a better public relations job with the general public as well as the funding agencies. In the game of grantsmanship and requesting funds for grants, it is interesting to note that the bulk of the dollars of foundations and federal government agencies have gone to white institutions to provide programs for disadvantaged blacks. The Black institutions which have submitted proposals competing for the same funds and identifying the intention of increasing the quality of programs for disadvantaged youth that they have traditionally served have been frozen out. These examples point to some of the results produced by lack of information.

A fourth external use of data by the institution is to **promote interaction and social change**. The concept of "communiversity" is the utilizing of resources of academic institutions to interact with the community and cause social change. Harold Hodgikinson, in his book **Education, Interaction and Social Change,**[5] points out that education takes place in highly organized social institutions and as such, that the formats of academic and social roles are bound to each other and that institutions are constantly sending out signals to those around them (which would be the community) indicating how we wish to have them behave. The institution which has the above data available, can select and identify areas for interaction within the community where it can have some success.

Thus far, I have spoken about use of institutional research internally and externally. All of these things relate to use of data which is primarily collected internally.

I would like now to briefly explore **some types of studies and research to provide this data**. These studies are identified in three categories: 1) Routine, 2) comparative internal/external studies, and 3) generative studies.

The **routine studies** are those which involve routine collection of basic data such as enrollment statistics used primarily by state coordinating or controlling boards, the United States Office of Education and Regional Accrediting Associations.

The second groups of studies, **comparative studies internal/external** would be in the following areas:

1) A comparative study of budget allocation to like institutions,

2) comparative studies of the academic market place, what the supply and demand is like for particular academic areas, and what the dollar value is,

3) analytical studies of legislation about higher education within a state as well as federal government legislation,

4) the monitoring of new legislation on a primary data basis, i.e., receiving the actual bills and legislative acts, reading and gleaning from these actions of the legislature rather than waiting for secondary or tertiary reporting services,

5) analytical studies about boards of control, their roles, their political involvement or non-involvement, and the degree to which they are addressing themselves to the interests and needs of higher education,

6) attitudinal studies about the publics which affect the university,

7) community studies which might point directions for university and community interaction,

8) studies of other "like" institutions, and

9) studies of the general American money market – including patterns of giving by foundations and support of programs.

This does not exhaust the kinds of studies which overlap the internal/external areas that would be beneficial to an institution. It merely highlights some of them.

The third group of studies is the generative studies. The institutional research area can generate studies by exploring relationships of many elements of the campus.

The use of the institutional research to help in institutional decision making and planning emerges as the central theme of this presentation. In order to implement or organize for using institutional research in this manner, it should encompass the following areas with persons who carry the portfolio for each of these areas: 1) Staff and student development, 2) instructional development, 3) curriculum development, and 4) fiscal development to support the institutional program. There should be some system by which internal routine reporting on a regular basis exists so that faculty, administrators and students are informed.

The office should provide services to the other agencies of the university, i.e., administrators, faculty, and student groups for conducting research studies or reports that would enhance further development of particular programs. All of the information should be used for planning.

In summary, appraisal and evaluation with future planning represents the base line of utilizing information for the benefit of institutions. Black institutions must for survival sake develop some degree of expertise and production in the area of institutional research in order to:

1) Know their institutions and programs,

2) project such image individually and then collectively as institutions of higher education having a valid and viable mission, and

3) Develop or internalize the concept and practice of regular analysis and implementations of findings to improve programs.

There is much controversy and question being raised about the future of the Black Institution, the proposals of merging with the traditionally white institutions, and the question in general of provision of higher education for blacks. This controversy is not new, merely revived. An article by W.E.B. DuBois, published in 1935 in the **Journal of Negro Education** and entitled "Does the Negro Need Separate Schools?" illustrates this long-standing controversy. His statement at that time is extremely pertinent now.

> "Theoretically, the Negro needs neither segregated schools nor mixed schools. What he needs is education. What he must remember is that there is no magic either in mixed schools or in segregated schools. A mixed school with poor and unsympathetic teachers, with hostile public opinion, and no teaching of truth concerning black folk, is bad. A segregated school with ignorant place holders, inadequate equipment, poor salaries and wretched housing is equally bad. Other things being equal, the mixed school is the broader, more natural basis for education for all youth. It gives wider contacts; it inspires greater self confidence; and suppresses the inferiority complex. But other things seldom are equal, and in that case Sympathy, Knowledge, and the Truth outweigh all that the mixed school can offer."

With clear and well defined images which are accurate and based on systematic data such as that Institutional Research can provide for the Black institution, coupled with the dissemination of the unique contribution to Black social development that Black Institutions have fostered, Black Institutions can individually and collectively relate to the relevancy of the future growth and development of the black college.

Institutional Research at Black Institutions can: 1) Provide knowledge for the mainstream which is accurate about its strength and weaknesses, 2) assist in long and short range planning, 3) allow institutions to better serve their purposes, and 4) help perpetuate higher education for Blacks by validating the programs and documenting them as well as projecting their potential.

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[1] Christopher Jencks and David Riesman. "The American Negro College," *Harvard Educational Review*, XXXVII, (Winter, 1967).

[2] Earl McGrath. *The Predominantly Negro Colleges and Universities in Transition*, Teachers College, 1965.

[3] SREB. *The Negro and Higher Education in the South*, 1967.

[4] Tilden LeMelle and Wilbert LeMelle. *The Black College*, Praeger: New York, 1969. p. 18.

[5] Harold Hodgikinson. *Education, Interaction and Social Change*, Prentice Hall, Inc.: New Jersey, 1967.

[6] W.E.B. DuBois. "Does the Negro Need Separate Schools?" *The Journal of Negro Education*, IV, (July, 1935). pp. 330-331.

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ATTITUDE PROFILES ON THE COLLEGE STUDENT QUESTIONNAIRE FOR FRESHMEN ATTENDING FOUR PREDOMINANTLY BLACK COLLEGES

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North Carolina Central University

In former years of institutional research, efforts to identify educational needs and attitudes of students have been limited, for the most part, to descriptive studies and surveys based on non-standardized tests and questionnaires. Recently, however, with the new emphasis upon research in higher education and the development of several standardized instruments, comparative or differential studies of student characteristics have been facilitated. An institutional researcher can now readily identify similarities and differences of the student body at his particular institution, relative to the student bodies at other institutions, by using the normative reference data provided with most standardized instruments. For the institutional researcher in a predominantly black university, however, the benefits of standardized instruments cannot be fully realized, because the normative data presents certain problems when comparisons involve black students.

In this paper, I will describe some of our problems and experiences in the interpretation of College Student Questionnaires (CSQ) results for North Carolina Central University and several other predominantly black institutions.[1]

Originally, at NCCU, we selected the College Student Questionnaires because they cover a wide variety of background experiences, attitudes, and other student characteristics that were of interest to those concerned with the educational development of students. Most of the items and scales on the instruments did seem of sufficient generality to be relevant for black students.

We administered CSQ 1 to entering freshmen in 1968, and CSQ 2 to the same students in spring of 1969, near the end of their freshman year. We found, upon receiving the results from ETS, that the tabulations of response frequencies and percentages for each item were of general interest to the faculty and administration, chiefly because the contents of the items were directly interpretable. On the other hand, the means of the scales for the student body as a whole could not be interpreted easily, because the national norms for the scales were not fully appropriate for black students.

In some instances the scale scores for NCCU students did correspond fairly closely with the national norms and then a simple conclusion could be drawn: the students at NCCU are representative of or similar to a national cross section of college students. There was little more to be said with respect to the comparative norms. In other instances, however, the scale scores for NCCU differed in one way or another from the averages for the norm group. This presented a dilemma: Did the performance differences result from the factors that are specific to the institution, its students, and its educational program, or did they result from general factors common to the cultural background of students at all predominantly black institutions?

Indeed, both of these questions are of fundamental importance in any analysis of the predominantly black institution. There is an urgent need for research to determine and understand the cultural background that is common to black students in order to plan and conduct programs that are relevant to the students. There is an equally urgent need for research that objectively assesses the unique characteristics of students at particular colleges and universities.

Appropriate reference norms could contribute to an understanding of these issues. If a test or a questionnaire is not narrowly-culture-bound, appropriate norms could help clarify those ways in which black students are culturally unique. Norms from standardized instruments could also help to clarify those ways in which one predominantly black institution is different from other predominantly black institutions.

Unfortunately, however, in-so-far-as black colleges and universities are concerned, norms that are typically provided with standardized tests are of limited value in relation to the question of general cultural characteristics of black students, and they are of almost no value in relation to the question of institution evaluation.

The reason that most norms are of limited benefit to predominantly black colleges is simply this: General cultural effects and specific institutional effects are confounded when one compares the means for a single predominantly black group of students with norms that are based upon predominantly white groups of students. In other words, as I have suggested, one cannot determine whether the differences result from factors that are specific to the institution and its educational program, or whether they result from general factors that are common to the cultural background of students at all predominantly black institutions.

Faced with this dilemma, an attempt was made to procure the scale scores from some other predominantly black institutions, and fortunately, CSQ 1 and 2 results were available for a number of such institutions in this region. Indeed, I was delighted to discover that the instrument had been administered to freshmen at a number of predominantly black institutions by RELCV in the fall of 1967 and the spring of 1968. NCCU was then participating in a research consortium with a number of black schools, and we were able to secure permission from the administrative officers of these institutions for release of the data; We analyzed the results for purposes of a comparative analysis and also to develop regional norms for the predominantly black institutions. It should be noted that two of the institutions were church supported, and one, in addition to NCCU, was state supported. All four schools emphasized the liberal arts.

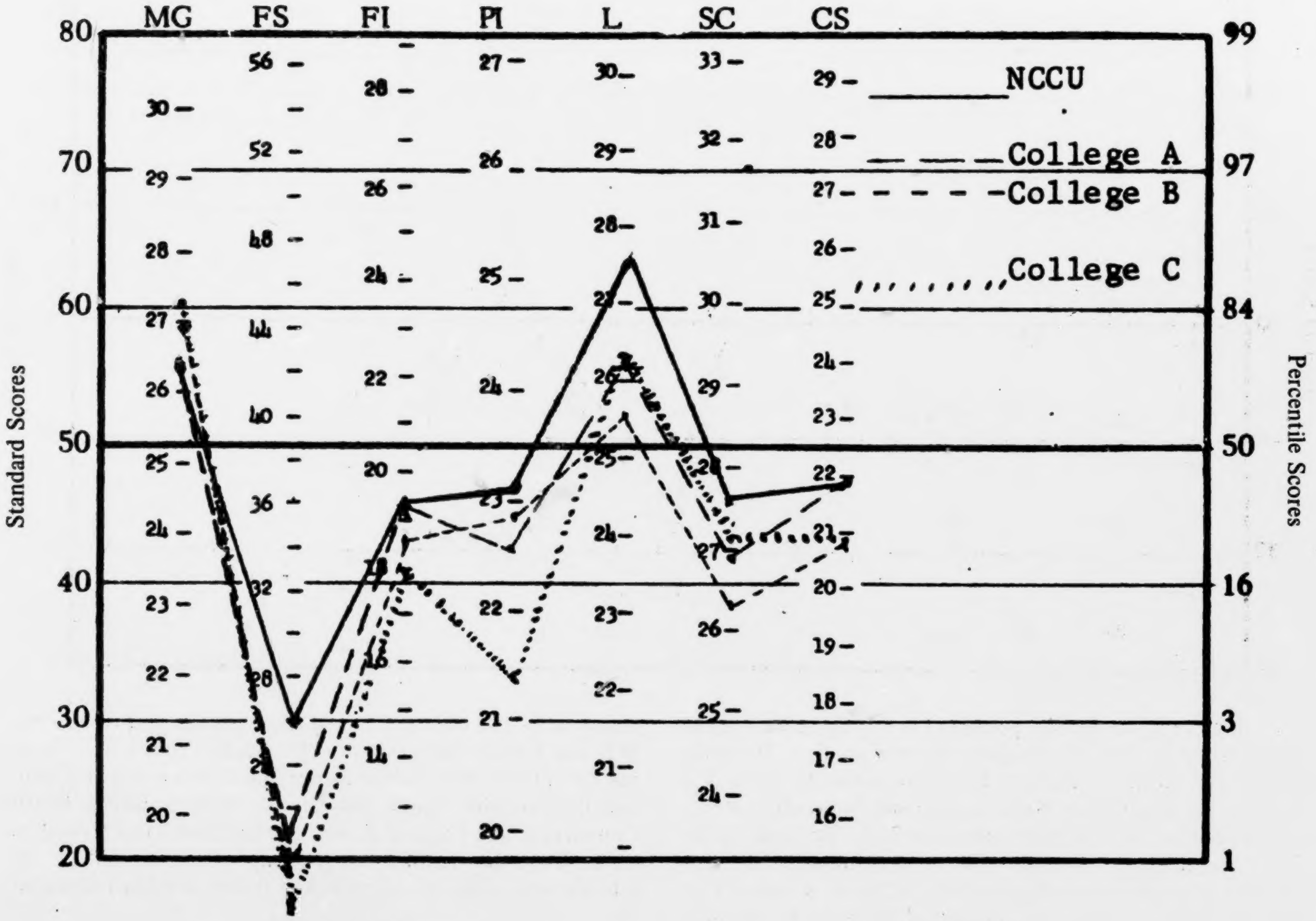
The initial analyses were concerned with the following question: What are the general similarities and differences among the entering freshmen at the four schools in terms of the characteristics measured by the CSQ 1 scales? From one point of view, these similarities and differences are indicative of the cultural background of the students; in other words, the data gave some indication of the cumulative effects of the students' backgrounds prior to their entrance to college. From another point of view, these data were also essential to the question of institutional effects, since the data represented baseline measures of the student characteristics and attitudes at the time they entered college.

Figure 1 presents the results of CSQ 1 for each of the schools, in relation to the standardized profiling form provided by ETS. This way of presenting the data allows for comparison of each of the predominantly black schools with one another and with the national norms that are based upon a predominantly white national sample. NCCU is the only school identified, because the administrators from the schools that permitted release of the data were given assurances that the identity of their schools would remain confidential in any presentations of the data.

Examination of Figure 1 shows that the means for the four predominantly black schools differ in a systematic way from the means for the national norming sample. The profiles for the four schools corresponded much more closely to one another than to the national norming sample. In fact the means on the Family Status Scale, representing the average socioeconomic status of the students' parental families were in all instances below the third percentile for the norming schools, and in two instances the actual values were not even represented on the chart. Of course, it was not terribly surprising to see this. Everyone knows that the students at predominantly black institutions come from families which are poor, although persons not acquainted with these institutions may recognize neither the extent of poverty among these families nor the implications concerning the impact of this poverty on the educational development of the students.

Figure 1

CSQ 1 Profiles for Entering Freshmen at
Four Predominantly Black Colleges



MG – Motivation for Grades
FS – Family Social Status
FI – Family Independence
PI – Peer Independence
L – Liberalism
SC – Social Conscience
CS – Cultural Sophistication

The means for the other six scales did not differ as markedly from the norm group means, and all were within the range of institutional means found for the norming population of schools. However, it is noteworthy that for each scale the means for the black institutions were either all above or all below the norm group means. All black schools were above the norm group means on Motivation for Grades (MG) and on Liberalism, while they were all below the norm group means on Family Independence (FI), Peer Independence (PI), Social Conscience (SC), and Cultural Sophistication (CS), as well as Family Status (FS).

This pattern suggests that on the whole, students enter the predominantly black school with considerable consciousness of and concern for course grades, with greater than average concern for both their families and their peers, with fairly liberal political attitudes, and with slightly less concern for broad, social and cultural issues, relative to students in the national sample of schools. I think it is important that the administrators and faculty members in these schools recognize this pattern as it represents the cultural background that the students bring with them to school.

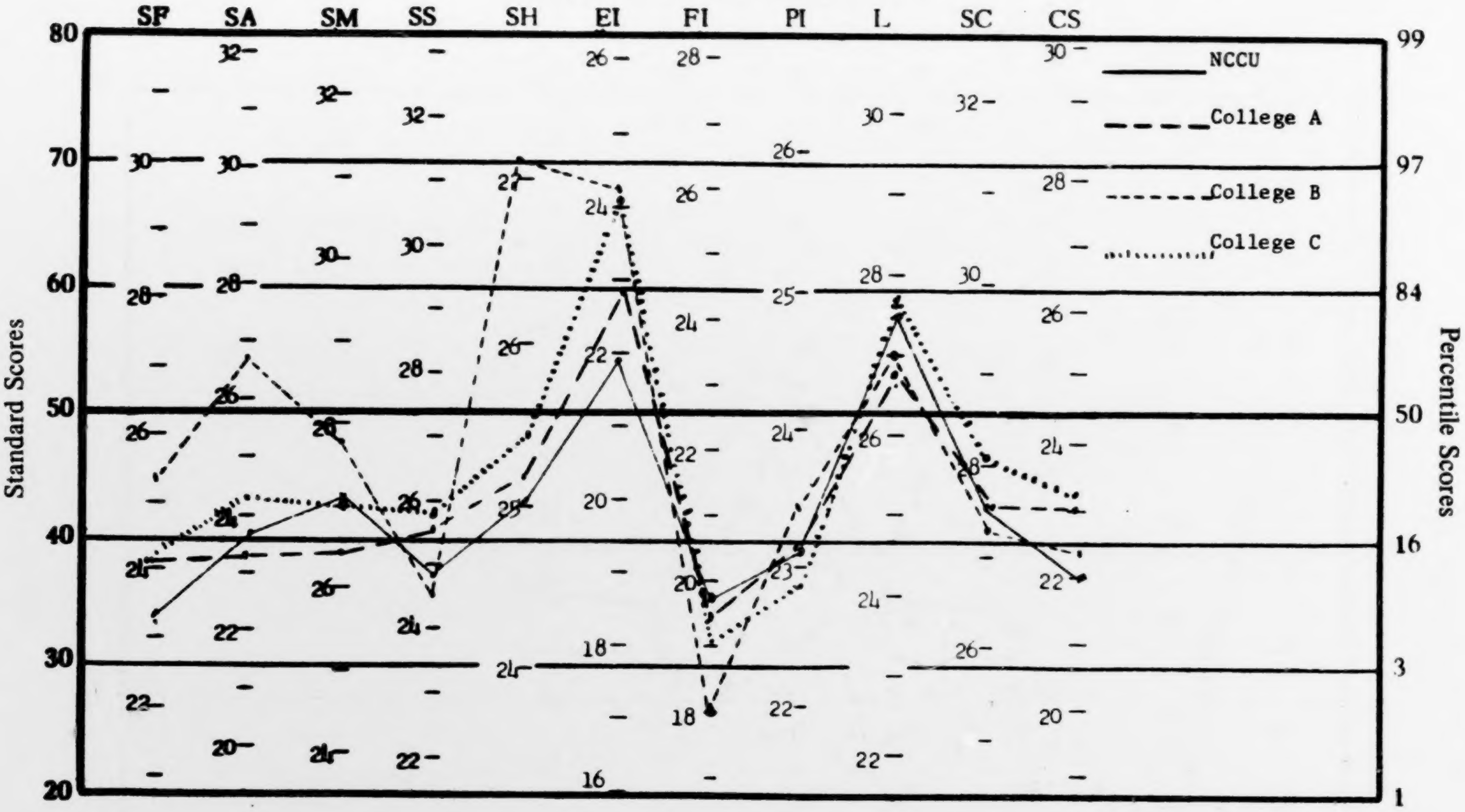
Presumably, administrators and faculty members will also be interested in knowing how students entering one predominantly black institution might differ from those entering the others, but time does not permit discussion of these institutional differences today.

The results for CSQ 2 are presented in the second figure. These results are generally based upon the same students who were included in the CSQ 1 study, but the CSQ 2 results are based upon the responses at the **end** of the freshman year. There are some students, however, who did not complete both instruments.

Figure 2

CSQ 2 Standard Score and Percentile Equivalents: Institutional Means

Second Semester Freshmen



In general, the profiles presented in the figure were again characterized by over-all similarity to one another. The only marked discrepancies occurred, first with respect to school A's scores on the Study Habit Scale, and second, to a lesser extent, on the Satisfaction with Administration Scale. The reasons for these discrepancies have yet to be determined, although informal inquiries have suggested that College A may differ from the others in being the smallest of the schools, and also in the nature of its tutorial program for students who experience academic difficulties.

With respect to patterns common to all four schools, the most outstanding variations from the norm group means occurred in the instances of the Extra-curricular Involvement (EI) and Family Independence (FI) Scales. To a lesser extent the Liberalism, Peer Independence, Satisfaction with Faculty, Satisfaction with Major, Satisfaction with Students, Social Conscience, and Cultural Sophistication Scales also tended to differ from the national norm group means, in that all the schools were either above or below the standardized means of 50.

The relatively large discrepancies for the EI and FI Scales may have some important implications for educators at these schools. The high degree of extra curricular participation suggests that the student culture and student activities are in actuality or potentially an unusually important aspect of the total educational experience at these schools. In view of the degree of extra-curricular involvement reflected by the scale scores, administrators and faculty members at these institutions would do well to analyze closely the relationship between the campus environment, activities, and educational program, because significant learning of attitudes, beliefs, and values presumably takes place when a student participates in social organizations, student government, athletics, and/or other activities.

The low Family Independence scores strongly suggest that the relationship to family members is another very significant concern of students at these schools. The students appear to be concerned about their parents' expectations, and the families seem to be closely united and indeed, growing closer together rather than apart. The nature of these family relationships cannot be further delineated within the scope of this discussion, but the potential educational implications of this finding make further study of the matter imperative. Many possibilities are implied. It is the strong family relationship that led these students to seek a college education in the first place. Does the supportiveness or lack of supportiveness and encouragement from the family play a strong role in determining whether the student will succeed in college? Could increased involvement of the total family in the educational program play a significant role in the motivational process? These and other questions may hold some clues to new insights and approaches to education for minority groups, disadvantaged students, etc.

While it may be unwise to draw definite conclusions from the study, I might offer several speculative hypotheses concerning the educational implications that might be drawn from the overall pattern of the results. To begin with, it is important to take into account the economic circumstances under which the majority of the students have been reared and their economic needs and concerns as they enter college. Of course administrators of predominantly black schools are aware of the problem, and programs such as the federally sponsored work-study program have provided aid for students who could not have otherwise attended college. However, I suggest that more needs to be done in terms of enabling students to plan and implement a strategy for financing their college education. For example, financial orientation and counseling programs could assist the students in coping with the problems which now discourage a number of students. There is, of course, always need for additional scholarship and loan funds, as well.

The social needs of the students during their first years in school are also of critical importance. Consider the close ties of the students with their families and peers. For many of the students, the abrupt move from the close-knit family and peer group to the relatively complex and strange environment in college is awesome, if not traumatic. Of course, the students do adjust in one way or another to their new situation. However, this adjustment takes place through experiences and activities that are out of the realm of the formal educational program of the school, and for the most part out of the realm of influence of the faculty and administration.

Semi formal programs which involve the family in the initial orientation to college, which enable the family to anticipate and understand the students' educational experiences and problems, which provide students with surrogate families if needed, and which implement close relationships with individual faculty members – such programs could facilitate positive adjustments to the college environment, rather than leaving the adjustments to chance.

Finally, in considering the finding that after one year in college, the students are very much involved in extra-curricular activities, I would suggest again that the most important events and experiences of the students are occurring out of the realm of influence of the faculty and administration. Particularly in view of the motivational problems that are common to the transition into the college environment, with its relative freedom and lack of structure, it would appear that marked academic benefits, as well as personal and social benefits, could result from a systematic integration of the curriculum with various extra-curricular activities. While this may sound far-fetched, it could indeed be accomplished in various ways. Faculty members **could** become more integrally involved in the informal student culture, as well as sponsored activities and organizations. Independent study programs **could** be developed which would enable students to approach subject matter in an informal, social context. And finally, curriculum **could** be designed to be flexible and relevant to the current world, and responsive to the social interests of the students.

The full significance of the findings concerning the Family Status, Peer Independence, Family Independence, Extra-curricular Involvement, and other CSQ Scales cannot be fully realized in this study. Much more analysis and research is necessary. However, the data does highlight the significance of the family on the one hand and extra-curricular activities on the other as important aspects of the higher educational program at these schools. These dimensions must be considered in any attempts to develop educational programs.

In conclusion, I think we can say that the comparative approach we have followed in this study has been rewarding, in the sense that the data for a given school are more interpretable and suggestive in comparison with data from several sister schools than without the comparative data. Indeed, I think the findings that came out of these relatively simple analyses have provided us with a number of insights and hypotheses concerning the general cultural background of black students, on the one hand, and concerning unique characteristics of each institution on the other.

Perhaps the values of this approach should be recognized in relation to other special types of institutions, as well as predominantly black colleges and universities. I think various colleges and universities could benefit from studies in which a number of institutions **of the same type** are compared. I propose that each school should establish comparative standards that are based upon institutions with similar student input, with similar programs, and with similar educational goals. I submit that "national norms" have been relied upon too heavily and too long.

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[1] Collection of the data for this study was sponsored by the U.S. Office of Education through the auspices of the Regional Education Laboratory for the Carolinas and Virginia (RELCV) and the Consortium for Research and Development (CORD).

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CSQ FRESHMAN ATTITUDES TOWARD BLACK POLITICAL LEADERS IN THE AMERICAN SOCIETY

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Had a modern day prophet undertaken ten years ago the task of describing the problems that would beset the university today, he would have been labeled a prophet of doom and viewed with disdain and pity. Today we know that it is not the pessimistic prophet who needs pity but the college and university administrator. The administrator in a university is under constant stress from a variety of sources, not the least of which is the student body itself. The gap between today's students and administrators seems to be wider than it has been in the past. Today's college student is an enigma to many college administrators. For some administrators the reaction of students to current problems and issues seems bizarre and incomprehensible.

Progress can be made toward understanding today's students by identifying and studying their background characteristics and their attitudes. The cultural climate from which students operate today is different from that of twenty or even ten years ago. The complexity of current problems is reflected in the multiplicity of forces influencing or attempting to influence modern man. College students are caught in the whirlwind of conflicting ideologies. In fact there are various forces influencing the student body in various directions, sometimes toward quite opposite ends. Students are often forced to make choices and to identify with various ideologies before they are emotionally and intellectually mature enough to do so. For instance, the black student quite early in his college career is caught up in the complex and sometimes conflicting ideologies of the black revolution.

It is important to study the cultural background of black college students because the specific factors that influence black students may be basically different from those influencing white students. For example, black students will presumably look toward different leaders, hero figures, ego ideals, etc. Moreover, identification with different leaders may reflect the general attitudes of students toward the future course of the black movement in terms of its goals and strategies. Thus it is possible that we can gain greater understanding of various black student subcultures by looking at the kinds of black leaders with which students identify. This paper reports the beginning stages of a study of different leader preferences among students at North Carolina Central University; it presents some of the tentative conclusions reached concerning the background and characteristics of members of two student subgroups.

To determine which black leaders the students looked toward, we asked the students to indicate which of the following they felt had done the most for black Americans: Malcolm X, Martin Luther King, Stokley Carmichael, Rap Brown, Whitney Young, Roy Wilkins, Dick Gregory, or James Brown. The number of students preferring the various status leaders are presented in Table 1.

TABLE 1

Status Leaders Selected by NCCU Freshmen 1969 as Contributing the Most to Black Americans

Status Leader*	Number of Students Selecting	Percentage of Group
Malcom X	58	89%
Stokley Carmichael	5	8
Rap Brown	2	3
Total Group A	65	
Martin Luther King	660	98
Roy Wilkins	7	2
Total Group B	667	

*James Brown, Dick Gregory, and Whitney Young were not selected by any of the students.

Because only a small number of students identified with Stokley Carmichael, Rap Brown, and Roy Wilkins, we conducted a preliminary analysis to determine whether students who preferred Roy Wilkins were similar to those who preferred Martin Luther King (who might be considered "moderate") and those who preferred Stokley Carmichael and Rap Brown were similar those preferring Malcom X (who might be considered "militant"). These analyses did suggest that students who preferred the militant leaders were similar to one another, and those who preferred the "moderate" leaders were similar to each other. Hereafter, students who preferred Malcom X, Stokley Carmichael, and Rap Brown will be referred to as Group A and those who preferred Martin Luther King or Roy Wilkins will be referred to as Group B. It should be remembered that the majority of those in Group A (89 percent) preferred Malcom X and those in Group B (98 percent) preferred Martin Luther King.

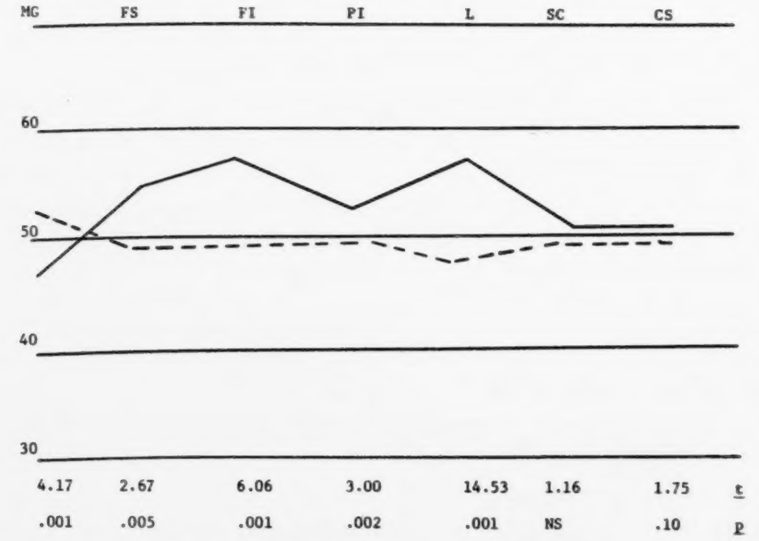
The next step in the analysis, involved an effort to compare the two groups of students who preferred these different types of leaders. In other words we compared Groups A and B to determine whether the leader preference of the students was associated with different attitudes, beliefs, and cultural orientations. All of the students in the study had completed the College Student Questionnaire Part I (CSQ I). This was fortunate because the thoroughness of the socioeconomic educational background and attitudinal information gathered in this instrument furnished a wealth of information.

We began by analyzing and comparing the two groups in terms of CSQ I scale scores. Significant differences in the mean

CSQ Profiles for Group A and Group B

Group A: Malcom X, Rap Brown, or Stokley Carmichael has done most to help black people

Group B: Martin Luther King, Roy Wilkins, or Whitney Young has done most to help black people



MG – Motivation for Grades
FS – Family Social Status
FI – Family Independence
PI – Peer Independence
L – Liberalism
SC – Social Conscience
CS – Cultural Sophistication

scores were found to exist between the two groups for five of the seven scales.

Two of the scales, Family Independence and Peer Independence, measure the autonomy of the student in his relationship to his parental family and his peer group. The scores for both of these scales were significantly higher for Group A than for Group B suggesting that students who preferred Malcom X were less susceptible to influence by their family and by other students. Students in Group B typically came from more closely knit families which seemingly exerted greater influence over them, and they were more likely to conform to the prevailing peer group mores. According to the CSQ I, technical manual students scoring higher Peer Independence scores, such as those of Group A, indicated a tendency toward inner-directedness. These students would be less influenced by the opinion of others concerning their personal life and behavior. Students scoring lower on this scale, as those in Group B did, have a tendency to be more extroverted or other-directed.

The Family Social Status Scale is a measure of the socioeconomic status of the respondent's parental family. Students in the predominantly black schools scored very low on this scale for obvious reasons. The use of our own NCCU norms enabled us to view the social status of our students from a more appropriate baseline. Viewed from this baseline, students in Group A came from families with higher

TABLE 2

Selected Items on Which the Responses of Group A Differed From Group B

Characteristics	Group A Number	Group A Percent	Group B Number	Group B Percent	X²
Sex					
Boys	37	57	252	38	
Girls	28	43	411	62	8.85
Degree of integration in high school attended					
Predominantly black	26	41	381	57	
Predominantly white, many blacks	11	17	126	19	
Predominantly white, with a few blacks	27	42	156	24	11.13
Size of hometown					
Suburb of metropolitan area	8	13	63	10	
A city over 500,000	13	21	44	7	
A city 50,000 – 500,000	13	21	100	16	
A city or town 10,000 – 50,000	17	27	155	24	
A town under 10,000	6	10	144	23	
Farm, ranch, or open country	5	8	131	20	20.20
Estimated high school grade average					
C or below	45	69	292	44	
B or above	20	31	364	56	14.56
Highest level of father's formal education					
High school or less	43	67	505	80	
Some trade school or college	17	27	99	16	
Professional degree	4	6	28	4	6.68

socioeconomic status.

This scale is based upon the family's income, education and occupation of the father and mother with the father's occupation being given the greatest weight. A closer examination of the items in this scale led to the conclusion that the major difference between the two groups was the educational level of the parents. The parents of students in Group A were more likely to have had some formal training beyond high school, as shown in Table 2.

On the Motivation for Grades Scale students were asked to evaluate themselves in terms of their high school experiences. Students in Group B scored higher on this scale viewing themselves as hard workers to whom good grades were important. Students in Group A scored lower on this scale indicating less concern in high school for good grades.

Although it was not included in the computing of the Motivation for Grades Scale score, students were asked in another section of the CSQ I to estimate their high school grade average. The students in Group A estimated their grade averages as lower than those in Group B (Table 2). One must ask next about the aptitude of the groups. Paradoxically, the SAT Verbal and SAT Math scores for Group A were significantly **higher** than for Group B (Table 3). The apparent contradiction here – Group A with greater academic ability but lower grades and Group B with lower academic ability but higher grades – can be partially understood by considering the scores of the two groups on the Motivation for Grade Scale. Group A, with greater academic ability but lower grades, was less motivated toward getting good grades while the reverse was true of Group B.

TABLE 3

SAT Scores for NCCU Freshmen - 1969-1970

	Group A		Group B			
TEST	**Mean**	**Standard Deviation**	**Mean**	**Standard Deviation**	**Difference**	**t**
SAT – Verbal	380.81	58.72	348.36	57.24	32.45	4.28
SAT – Math	390.95	58.99	375.67	61.99	15.28	2.36

The degree of cultural sophistication possessed by the students is measured by another scale. Although the difference in the mean scores for the two groups was not as significant for this scale, Group A seemed to have slightly greater knowledge and experience with art forms and ideas and a greater sensibility in the general area of the humanities.

Two of the scales on the CSQ I were related to attitudes and social awareness. On one of these, the Liberalism Scale, the difference between the two groups was more pronounced than for any other scale. The students in Group A scored much higher on the Liberalism Scale indicating a greater support of change in the political and social area. These students were dissatisfied with the status quo and wished to see changes made. The students in Group B on the other hand tended to oppose welfare legislation, and were less intolerant of persons who disagree with established American political institutions.

On the second of the scales related to social awareness the Social Conscience Scale, there was not a significant difference between the scale scores of the two groups. Although the degree of difference was not as great for this scale as for the other scales, the direction of the difference was the same with the members of Group A reflecting a greater moral concern for social justice. Lower scores on this scale such as those recorded by students in Group B do not necessarily represent active support for the status quo or a belief that social justice does not exist. They do represent, however, a lack of concern, detachment, or apathy about such matters.

Significant differences between the Groups A and B were also found on three other items not included in the scale scores (Table 2). The members of Group A were more frequently males and those of Group B, females. The members of Group A were, generally speaking, from larger cities or towns than those in Group B. Only 17 percent of those in Group B came from larger cities or their suburbs while 34 percent of those in Group A came from these more populous areas. Twenty percent of those in Group B came from rural areas but only 8 percent of those in Group A did.

One of the local items asked the students to indicate the degree of integration present in the high school they had attended. Fifty-seven percent of the students in Group B came from segregated or predominantly black high schools while forty-two percent of the students in Group A came from predominantly **white** schools with only a few blacks enrolled. In other words, there is a tendency for those students who identify with Malcom X to come from integrated schools.

Conclusion

As a result of this study some tentative conclusions concerning the students in Group A and B can be made.

The students who preferred Malcom X. Rap Brown, or Stokley Carmichael were more likely to be males, from predominantly white high schools and from larger cities. Although these students have greater academic ability as measured by the Scholastic Aptitude Tests, they were less motivated in high school toward getting good grades, and did in fact report their high school grades averages as lower. Their family socioeconomic level as measured by the CSQ Scale was higher than that of other NCCU students, primarily because of the educational level of the parents. They showed greater independence from their families and less tendency to conform to the mores and customs of their peer group. They showed greater liberalism than other black students.

The students who preferred Martin Luther King were more likely to be females, from predominantly black high schools, in smaller towns or rural areas. Although their SAT scores were lower, their motivation for grades was higher and they reported higher average high school grades. They tended to come from families with lower socioeconomic status, but these families were more closely united and the students were more closely united and the students were more likely to seek their family's advice about problems. They seemed to be more outer-directed in their relationships with their peer group and to conform to the prevailing peer norms. Although as a group they were slightly more liberal than the majority of American college students, they were not as liberal as the students who preferred Malcom X.

As often happens with studies of this type, more questions were raised than were answered. First, question of cause and effect: The pattern of differences in the scale scores of the two groups is consistent with the hypothesis that the leaders with whom the students identified influenced their ideologies and attitudes. On the other hand, it is equally possible that students with different attitudes prefer or identify with different leaders. Be that as it may, certain differences did occur. Second, there is the long term question of how these students actually develop, in terms of attitudes, achievement, and behavior, as they proceed through college. At the end of their freshmen year these students completed CSQ II. A study of the students who changed their leader preferences and/or their attitudes as measured by the instrument will be of great interest.

Before further study of these problems can be made, it will be necessary to establish the validity of the CSQ scales for use with NCCU students. The data from the four other predominately black North Carolina schools will be extremely useful in developing local scales for this phase of the study.

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ACCEPTANCE OF HONORARY MEMBERSHIP

Charles E. Howell
Northern Illinois University

I feel most thankful and am very pleased that this organization has seen fit to include me with John Dale Russell and Dr. Brumbaugh in making me an honorary member. I am only sorry that my physical condition makes it impossible for me to be with you in person tonight to accept this honor. In many ways I feel a close identification with this organization, having been in attendance and participated in programs and the early organizational meetings of this Association. Many of you will also recall in those early days the two national conferences on Institutional Research which we sponsored through the Bureau of University Research at Northern Illinois University. But it is not of this that I wish to speak at this time in acceptance of this honor.

In a talk before this group in Minneapolis I warned that we must always consider ourselves, not as policy makers, but as fact finders, a group which would always lay before our several administrations (local, state, and national), the facts and the probable consequences of any decisions they might make. We are in the business of providing factual bases for possible action and we must do this without fear or favor.

It is, in my opinion, the proper function of institutional research, not to determine institutional purposes, but certainly to point out the probable results of the adoption of such programs. How many of our institutions have adopted programs and started actions, without the slightest vestige of advanced institutional research, which in many cases would have indicated that these programs were or were not needed, or were bound to fail. Perhaps a number of recent campus demonstrations might well have been prevented had institutional research been properly conducted and properly presented to the proper persons. That this organization has grown to the extent that it has is indicative of the increasing dependence felt for more relevant, factual information.

In closing let me say that I am proud to have been named as an honorary member of this organization, and am only sorry that it is impossible for me to be with you this evening. I would have liked very much to renew old friendships and make new ones. Thank you very much.